The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. XLIV. CHICAGO, ILLINOIS, JUNE 10, 1905. No. 23.

Original Articles

DIFFERENTIAL DIAGNOSIS BETWEEN COXA VARA AND OTHER STATIC, INFLAMMATORY AND TRAUMATIC AFFECTIONS OF THE HIP JOINT.*

NICHOLAS SENN, M.D.

CHICAGO.

The surgeon not infrequently meets with cases in which it is extremely difficult and sometimes impossible to make an early and positive differential diagnosis between the different forms of static, inflammatory and traumatic affections of the hip joint. The diagnosis of the different affections of the hip joint has gained much by the use of the Roentgen ray as one of our modern and most reliable diagnostic resources, and in obscure affections of the hip joint it should invariably be resorted to; in the majority of cases the information thus gained will forge the last link in the long chain of diagnostic reasoning by exclusion. Even this diagnostic aid, owing to the complicated structure of the hip joint, its deep location and diversity of function, will fail in some cases in clearing up the existing doubt. As an isolated diagnostic aid, it will not infrequently lead the surgeon astray in his search for a correct diagnosis. A careful, painstaking clinical study of the case from all aspects, anatomic, physiologic, mechanical, etiologic, and pathologic, must precede the use of the Roentgen ray, which should only be employed as a diagnostic resource in verifying or correcting the clinical diagnosis. Among the newest, most obscure and least understood deformities of the hip joint is an affection of the femoral neck which manifests itself clinically and pathologically by softening, bending and torsion known and described as coxa vara.

This strange joint disease has not received from the American surgeons the attention its clinical importance merits. Few outside of Germany have made it the subject of special investigation. For a long time pathologists and surgeons have been aware of the existence of a strange deformity of the femoral neck which by mechanical causes seriously interfered with the use of the affected limb and for which they could give no satisfactory explanation. Specimens of this kind can be found in some of the old pathologic museums where they were stored away years ago awaiting a satisfactory interpretation of their pathologic significance. Orthopedic operations were repeatedly performed for the purpose of improving function in cases which are now known to have been instances of coxa vara. It was not, however, until 1888 that coxa vara was made the subject of an earnest clinical study by E. Müller, who proved by his careful observations that it was a disease of the neck of the femur entirely different from any of the then known diseases of the proximal end of that bone. Six years later, and almost simultaneously, Hofmeister and Kocher made valuable contributions to the pathology and clinical history of this disease. Before a true conception of the clinical features of coxa vara was formulated by these pioneers in this part of the surgery of the hip joint, this disease was confounded with the inflammatory affections of the proximal end of the femur, and was diagnosticated and treated as coxitis. A genuine coxa vara is characterized by a non-inflammatory softening of the neck of the femur, accompanied or followed by a downward bending and torsion.

As a knowledge of this disease became more general, it soon became apparent that other affections of the neck of the femur were included under the term coxa vara. Kredel was the first to call attention to the congenital form of the disease and reported two cases that came under his own observation. Similar cases were observed later by Mouchet, Aubion, Schede and Kirmisson. Kirmisson is of the opinion that the congenital form is caused by harmful intrauterine pressure. Distortion of the neck of the femur simulating coxa vara has also been observed in cases of congenital dislocation of the hip joint, more especially in long-standing cases. Wagner describes a case of this kind from Hoffa's clinic. It has also been seen in osteomalacia, and Hofmeister and Alsberg have each reported such a case. Rachitis is likewise frequently mentioned as a cause of coxa vara, and such cases are spoken of as coxa vara rachitica. Lauenstein found in a rachitic skeleton the angle of the femoral neck on one side diminished, and on the other increased. Hoffa states that coxa vara rachitica is not of very rare occurrence, while Charpentier, who examined many rachitic skeletons, did not find a single specimen in which the neck of the femur was in a horizontal position. Nearly all authors agree in admitting that all inflammatory affections, chronic and acute, tubercular and suppurative, may give rise to distortion of the neck of the femur simulating coxa vara, and cases in support of this opinion have been described and reported by Volkmann, Schede, Stahl, Oberst, Bruns, and others.

Arthritis deformans has much in common with the deformity of the neck of the femur, caused by coxa vara, and Kirmisson and Charpentier regard the two conditions as identical. In two cases of coxa vara operated on by Maydl, the specimens presented the gross pathologic changes typical of arthritis deformans. A form of traumatic coxa vara has been described in connection with a trauma resulting in epiphyseolysis and fracture of the femoral neck. Several of the authors who have contributed most toward elucidating the pathology of coxa vara, among them Kocher, Alsberg and Sudeck,

* Presented in abstract to the Pan-American Medical Congress, Panama, January, 1905.

insist that separation of the head of the femur from the neck in persons below the age of puberty can take place in consequence of very slight application of force, and that the displacement of the head and the subsequent manner of repair will give rise to a deformity which corresponds with the clinical phenomena of coxa vara. De Quervain reports a case of fracture of the neck of the femur operated on by Kocher in which such a condition was found. Two similar cases have been reported by Sudeck and Alsberg. From the foregoing, it becomes apparent that even at the present time much confusion exists in reference to the limitation of the term coxa vara from an etiologic, as well as from a pathologic, standpoint. That there is such a thing as a non-inflammatory, non-traumatic softening of the neck of the femur in young subjects, followed or attended by deformation, there can be no further doubt, and it seems

Fig. 1.—Bending downward of the neck of the femur with elongation and flattening of the head.

to me that the term coxa vara should be limited to such cases, or at least this form should be called coxa vara *vera,* in contradistinction to the somewhat similar deformation produced by traumatic and inflammatory causes; in other words, deformations of the femoral neck should be classified on an etiologic basis, the only firm and sound foundation for a rational nomenclature of this as well as of any other disease.

I have had an opportunity to examine in my practice three cases of coxa vara; two in my clinic in Rush Medical College, and one in private. I have undoubtedly had my share of cases that I did not recognize before this disease was known, and I have done what others have done before that time, diagnosticated and treated them as cases of tubercular coxitis. These cases did not suppurate and the patients eventually recovered with good functional result. The two clinical cases mentioned presented the usual evidences of this disease. Both patients were young men between sixteen and eighteen years of age. Rest and the internal administration of phosphorus in minute doses constituted the treatment. In one of these cases the acute stage lasted over a year. I made use of phosphorus under the belief that the softening of the bone was the result of a late localized rachitic process, and that this drug might possibly have the same salutary effect as in the general infantile form of the disease. The third case is of more than ordinary interest, owing to the advanced age of the patient. In forty cases of coxa vara collected by Hofmeister and Frazier, the oldest patient was twenty-one, and all authors place stress on the well known fact that this disease is met with only in children and in adolescents, and in Frazier's table it will be seen that by far the largest number of cases were between fourteen and eighteen years of age. In all probability a doubt will be raised in the minds of many concerning the correctness of the diagnosis in this case, and it will be alleged that the deformity of the

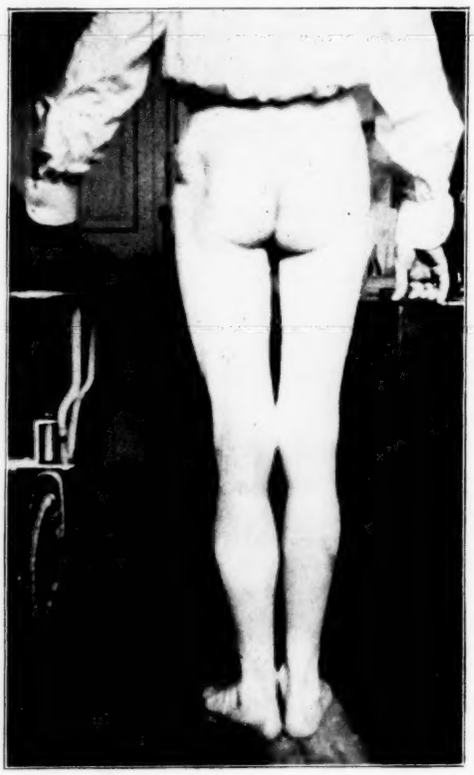

Fig. 2.—Right trochanter major abnormally prominent. Gluteal crease two inches lower on right side.

neck and head of the femur was caused either by fracture or by senile arthritis. A careful study of the clinical history and inspection of the photographs and Roentgen photogram (Fig. 1) will exclude the possibility of a mistaken diagnosis.

Patient.—A man, aged 42, belongs to a long-lived family, and is free from any hereditary taint.

History.—He is a native of this country and was engaged in literary work. He is married, but childless. He is five feet nine inches in height and weighs 129 pounds. With the exception of a moderate use of alcohol and tobacco, his habits are faultless. He has passed through the ordinary diseases of childhood, with the exception of diphtheria. He gives no history of typhoid fever or pneumonia; on the contrary, his general health has been excellent. At the age of 27 he contracted syphilis, followed by mucous patches and characteristic cutaneous eruption.

Present Illness.—Three years ago he experienced a dull

aching pain in the right hip joint, alternating with lancinating pains extending along the anterior surface of the thigh as far as the knee. The pain came on in paroxysms which would last for about two weeks, followed by painless intervals of several days' duration. There was no tenderness and no impairment of joint motion; the pain was not aggravated by standing or walking. Last February he was suffering from one of these painful attacks and had become slightly dizzy; when in the act of carrying two coal scuttles filled with ashes he slipped on the ice and fell with full weight squarely on the buttocks. He immediately regained his feet and finished his task without any apparent ill effects from the fall, and repeated the same work. When he reached home, soon thereafter, he perspired freely, and when he sat down to table he felt "stiff" all over. Next day, about noon, he experienced severe pain in the affected hip joint on walking, and went home in a cab, and the same evening he had to resort to the help of a cane to enable him to walk. Osteopathic treatment seemed to improve his condition. Ten days later, in ascending the stairs, he slipped and fell lightly on hands and knees, and then rolled on the right side, but experienced no immediate untoward symptoms, and climbed the stairs, but on reaching the top the pain in the hip became more severe and he could not stand without some support. The next morning, on leaving his bed, the pain remained quite severe, and was aggravated by flexion and rotation of the thigh. The lameness increased, and a week later the patient became aware that the affected limb was shorter. He has never been confined to bed, and at the time he consulted me, last fall, he walked with a decided limp, but without the aid of any mechanical support. General health of patient is good.

Examination.—There is flat-foot on both sides. The right limb, especially the gluteal region, is markedly atrophic. The trochanter major is abnormally prominent; the gluteal crease is two inches lower than on the left side (Fig. 2). Comparative measurements revealed a shortening of an inch and a half, and the great trochanter is displaced the same distance above the Roser-Nélaton line. At the base of Scarpa's triangle a slight prominence can be felt. The right limb is slightly rotated outward; there is no adduction of thigh. Standing on the left limb, the patient can execute all movements of the thigh freely, without pain, and in all directions, except full abduction. There is no tenderness and no pain. The paroxysmal attacks of pain subsided months ago, and the function of the limb has been improving slowly but steadily. He walks with a decided limp and all he complains of is a muscular weakness and functional defects which will yield to a considerable extent to restoration of the equilibrium of the body by increasing the thickness of the sole of the shoe on the affected side, to make up for the degree of actual shortening, electricity and massage.

Remarks.—The Roentgen picture illustrates the bending downward of the neck of the femur to a horizontal level, elongation and flattening of the head of the femur (Fig. 1). It is not likely that either injuries resulted in an infraction, much less a complete fracture, but there can be no question that they resulted in each instance in an aggravation of the pre-existing local difficulty. The spontaneous recovery, as well as the degree of bending downward of the neck of the femur in its entire length and the complete absence of neoplastic inflammatory products, exclude absolutely the possibility of arthritis deformans or senile coxitis. The clinical history as well as the intra-articular conditions revealed by the *x*-ray could not possibly give rise to a suspicion of tubercular coxitis. The posterior bending of the femoral neck in this case was slight, consequently little backward displacement of the great trochanter; hence the comparatively good remote functional result. If this is a case of coxa vara *vera*, as I believe it to be, it would prove that this disease is not limited to the bone-growing period of life, and that it may, at least in rare cases, attack the adult.

ETIOLOGY.

Very little is known concerning the true nature of coxa vara. The authors admit that the softening of the neck of the femur is the most important element which gives rise to the subsequent deformity which is largely due to the superimposed weight of the body. Kocher and Langhans claim that the softening is caused by a localized juvenile osteomalacia. Others regard it as a late form of local rachitis.

Küster reports a case in which he attributed the characteristic distortion to ostitis fibrosa. Whitman and Sudeck believe that the yielding of the femoral neck can take place without previous softening of the bone by gradual changes in the architectural disposition of the supporting and traction arches in the bone under the weight of the body. Kocher, König, and several other authors consider coxa vara mainly in the light of an occupation disease in the same sense and due to similar causes as genu valgum and flat-foot. Kocher has seen it most frequently in young males whose occupation necessitated prolonged standing position with legs abducted, as is the case with cheese makers and some agricultural pursuits. There are, however, many cases on record in which no such direct static cause could be made responsible for the deformity. Jaboulay has gone so far in comparing coxa vara with flat-foot as to call it simply *"hanche bot,"* and insists that it may be either of congenital origin or acquired-static form. He called attention to this affection of the neck of the femur as early as 1890.

Sprengel reported two cases in 1898, in whom resection of the hip joint was made, and both specimens showed a loosening of the head of the femur in the epiphyseal line, the result of a slight trauma. The displacement of the head and the subsequent union in malposition gave rise to the characteristic deformity, and he is therefore inclined to attribute to trauma the most important etiologic rôle. A number of similar cases have been reported since, and not a few surgeons are under the belief that trauma is the most important element in the causation of this disease. Charpentier and Kirmisson claim that coxa vara is nothing more nor less than a form of arthritis deformans coxæ.

Hoffa recognizes different causes which may affect the resisting power of the neck of the femur, which when so affected yields under the weight of the body, and results in diminution of its angle and sometimes in torsion; the former are the predisposing, the static influence the exciting, cause.

PATHOLOGY.

The gross pathology of coxa vara is well understood and consists in a bending downward of the neck of the femur until it reaches a horizontal line, combined in most cases with a posterior curve, and in rare instances with an anterior curve, these secondary curves causing outward or inward rotation of the axis of the femur. The textural changes are limited to the neck of the femur, the acetabulum and the soft structures of the hip joint remain intact throughout the entire course of the disease. There is no effusion in the affected joint, and no tissue changes in or around the joint indicative of inflammation. The general and local symptoms exclude the existence of any kind of infection and the bone lesion, whatever it may be, is of a degenerative and not of an inflammatory type. Under the weight of the body, the softened neck of the femur bends downward, and muscular action and ligamentous traction are responsible for the torsion, which varies greatly in kind and degree. The primary bone affection appears to be of a self-limited character, as a spontaneous recovery is the rule. The duration of the active stage may terminate

in a few months, and it may be protracted for years. Very little is known regarding the minute morbid anatomy of the primary bone affection which precedes and accompanies the deformation of the femoral neck. As the disease is a self-limited one, few, if any, postmortem examinations have been made so far.

The study of the histology of the bone lesion has been restricted to the examination of specimens obtained by resection (Müller, Kocher, Hoffa, Nasse, Maydl). Frazier gives an account of 16 such specimens from different sources, in which, on examination, three presented rachitic changes, six practically normal bone structure, two arthritis deformans, and the remaining specimens juvenile osteomalacia. It appears that in the cases collected by the same author and comprising Hofmeister's table, only in 12.5 per cent. could the disease be associated with rachitis, and only in 10 per cent. were genu valgum or pes planum, one or both, coexisting affections.

Haedke made a histologic examination of a specimen of coxa vara obtained by resection from a patient seventeen years old. He found a condition similar to rachitis both macroscopically and microscopically. He came to the conclusion that coxa vara may develop at the age of puberty consequent on the so-called late rachitis, although the "juvenile osteomalacia" of Kocher is probably the explanation of the greater number of cases. In Lauenstein's case, there were indications of marked rachitic deformities in many of the long bones. Osteomalacia is a disease that affects, with few exceptions, child-bearing women; rachitis, on the other hand, is a much more common disease and affects children of both sexes alike, consequently it is much more reasonable to assume that the softening of the bone is more likely to be caused by a late localized rachitic process than by osteomalacia. Two other explanations deserve consideration.

As coxa vara is largely, if not exclusively, a disease of the bone-growing period, we might suspect, from a histologic standpoint, either the existence of imperfect ossification caused by a defect in the number or power of histogenesis of the osteoblasts, or possibly an excess of osteoblasts. Again, as the disease is clinically characterized during the acute stage by neuralgic lancinating pains, it is possible that the defective resisting power of the neck of the femur and the osteoporosis might be the consequence of a trophoneurotic affection. In eliminating the affections of the hip joint which clinically mimic very closely coxa vara *vera*, it is very evident that much has to be accomplished in the future to clear up the true etiology, and correct pathology of this strange disease.

SYMPTOMS.

The first symptom complained of by the coxa vara patients is a pain in the hip joint which usually radiates from the joint along the anterior and inner aspects of the thigh as far as the knee. In some cases the function of the joint is seriously impaired almost from the beginning, more especially in the more acute form of the disease; in other instances it is only slightly affected. In severe cases the patients are sufficiently ill to be confined to bed, but ordinarily they are well enough to be about, although quite lame. Temperature and other constitutional disturbances, as well as tenderness about the affected joint, are absent. Patients thus affected are usually under the belief that they are suffering from rheumatism, and when they consult a physician during the early stage of the disease, a diagnosis either of rheumatism or of neuralgia is usually made and treatment directed accordingly. In the course of a few weeks or months the acute symptoms subside, and a decided improvement is noticeable, so much so that the patient resumes his occupation with or without stiffness of the joint. The general health of the patient is not deteriorated to any extent by the disease. Examination of a patient the subject of well-advanced coxa vara reveals apparent and real shortening of the affected limb, the former due to a faulty position of the pelvis, the latter corresponding with the diminution of the degree of obliquity of the femoral neck caused by its downward bending. The normal angle of the femoral neck in the adult, as determined by Mikulicz, is from 125 degrees to 126 degrees, and according to Lauenstein from 126 degrees to 129 degrees. In far-advanced cases of coxa vara the angle is often reduced to 60 degrees. The real shortening varies from an inch to an inch and a half. The affected limb will be found adducted, and in the majority of cases rotated outward. The adduction of the limb is caused by the diminution of the angle of the neck of the femur and the outward rotation by the posterior secondary flexion or torsion of the neck. The downward bending of the neck of the femur is the most conspicuous anatomic feature of the disease, being invariably present to a greater or lesser degree. The posterior curve or torsion is less constantly present, and varies more in degree. In exceptional cases, the neck of the femur bends in the opposite, anterior direction, in which event the femur is rotated inward instead of outward. Such cases have been described and reported by Zehnder, Ghillini, Nasse and Hofmeister. The trochanter on the affected side is abnormally prominent, displaced backward and above the Roser-Nélaton line to the extent corresponding with the degree of actual shortening. The gluteal region is flattened, the gluteal fold lowered, and a deep groove will be found between the trochanter and the gluteal muscles. Ogston, who operated on five cases of coxa vara in young children, the oldest only fourteen years, claims that muscular atrophy is absent, and that the gluteal fold is not affected. In grave cases, the base of Scarpa's triangle is prominent, and a hard swelling can be felt corresponding with the convexity of the posterior curve of the neck. If inward rotation should be present, no such prominence can be felt but instead of it, probably, a shallow depression corresponding with the concavity of the anterior

Fig. 3.—Destructive process involving neck of femur.

curve. Aside from the mechanical obstacles due to the distortion of the neck of the femur, joint motion is free and painless. Abduction and inward rotation are the two movements most interfered with by the deformed neck. Unilateral coxa vara leads to static scoliosis, and, if the disease involves both hip joints, a lordosis develops, as in cases of double congenital dislocation of the hip joint, and the patient assumes the same waddling gait. Hands and feet are frequently livid, a condition often observed by Mikulicz in cases of genu valgum in the adult.

DIAGNOSIS.

If an adolescent consults a physician complaining of lameness, pain in the hip radiating in the direction of the knee joint, and on examination the femur is found adducted and rotated outward, the suspicion of coxa vara is well founded, as a similar position of the limb is only observed in fracture of the neck of the femur. If such abnormalities in the position of the limb in young subjects take place in a comparatively short time, coxa vara

Fig. 4.—Inflammatory deposits involving femoral neck, especially its base.

must be suspected, and a most thorough examination should be made with the patient in both the standing and recumbent positions. If this is done mistakes in diagnosis will be avoided, more especially in differentiating between this disease and the early stages of tubercular coxitis. Coxa vara never gives rise to abscess formation, while this is of frequent occurrence in tubercular coxitis. The onset of coxa vara is more abrupt and acute than what is observed in the majority of cases of tuberculosis of the hip joint. It is a self-limited disease, and sooner or later a spontaneous cessation of the acute symptoms may be confidently expected, while the opposite clinical tendencies characterize tubercular coxitis. Tuberculosis of the hip joint, like tubercular processes in other parts and organs of the body, is generally attended at least by a slight rise in the evening temperature, while the temperature in coxa vara remains normal. Tubercular coxitis in the great majority of cases is a disease of childhood, and begins in the larger proportion of instances as a primary osteal affection in the proximal end of the femur. Its onset is insidious. The pain is referred to the inflamed joint, and radiating in the course of the obturator nerve to the inner condyle of the femur. During the early stage of the disease the thigh is slightly flexed, abducted and rotated outward. Nocturnal muscular twitching is almost a constant symptom; this is something which is never found in coxa vara. In tubercular coxitis, muscular rigidity fixes the joint at an early stage and all movements are productive of pain, and light blows against the condyles invariably aggravate the pain. Tenderness, such a marked clinical feature in tubercular and other inflammatory affections of the hip joint, is never found in coxa vara. Shortening and outward rotation of the limb belong to the latter stages of tubercular coxitis, while in coxa vara they may even precede the painful or acute stage of the disease, and the shortening is always one of its early manifestations combined usually with outward, and, in exceptional cases, with inward rotation of the limb. As a final diagnostic test in doubtful cases, the employment of the Roentgen ray will enable us to differentiate between the two affections (Fig. 3). In coxa vara, the downward bending of the femoral neck is almost characteristic, while in tubercular coxitis the *x*-ray picture will show the existence of a destructive process

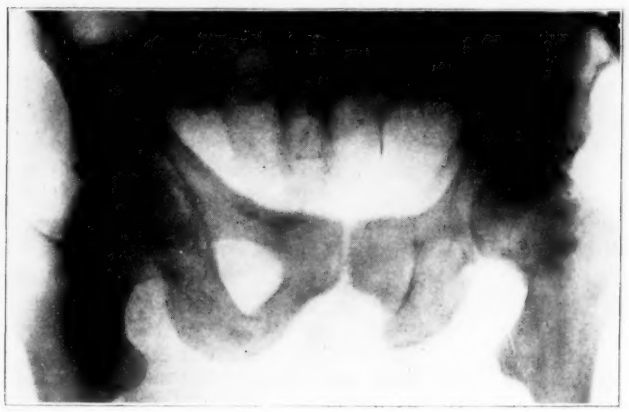

Fig. 5.—Perfect bony union of impacted fracture of the neck of the femur.

involving the proximal end of the femur, frequently complicated by coexisting or consecutive disease of the acetabulum.

Bilateral coxa vara is of more frequent occurrence than bilateral tuberculosis in the relative proportion with which these two diseases are encountered in practice. Muscular atrophy is more marked in tubercular coxitis than in coxa vara. The differential diagnosis between coxa vara and arthritis deformans, called senile coxitis, where it affects the hip joint, presents fewer difficulties. Coxitis senilis is a disease of advanced life.

Old age is a relative term in this as well as in many other connections. Some men are old at forty years, others remain young in body and mind at the age of the Psalmist's limit of life. Cases of senile coxitis are met with in persons less than forty-five years of age. It may be claimed that the case which I report in this paper is one that should be classed under the head of senile coxitis. There is only one condition in the radiographic illustration of this case that might excite doubt, and that is the elongation and flattening of the head of the femur. This condition, however, is not incompatible with my diagnosis as we may safely assume that the same causes

which softened the neck of the femur sufficiently to yield to the weight of the body may have extended to the head, rendering it liable to undergo alterations in shape under the influence of the same mechanical or static causes. On the other hand, this picture is entirely negative concerning the constant pathologic conditions found in senile coxitis, viz., neoplastic inflammatory deposits involving the femoral neck, especially its base, the acetabulum in the form of a new bony deposit, which finally result in a complete ankylosis (Fig. 4).

In senile coxitis the angle of the neck of the femur is not diminished. Arthritis deformans is not infrequently a polyarticular disease, while coxa vara is an affection which is only met with in the hip joint. In senile coxitis, the head of the femur becomes occasionally elongated, but during the later stages the upper surface is deprived of its cartilaginous covering, and the exposed underlying bone becomes hardened and is polished by the limited movements of the joint. In the case reported, such changes have not taken place, most of the movements of the joint have been rather increased than otherwise since the cessation of the acute symptoms. There is no pain, no cracking or roughness elicited by joint motion as in well advanced cases of senile coxitis. The shortening of the limb in senile coxitis is not caused by bending downward of the neck of the femur, but by loss of tissue of the head of the femur and the upper segment of the acetabulum.

It should not be difficult to differentiate between coxa vara and traumatic or pathologic epiphyseolysis. These are injuries and affections recognizable by a careful study of the clinical history and by a thorough examination. The only exception I know of that might lead to a wrong diagnosis is a fracture of the neck of the femur without complete functional loss of the limb, an instance of which came under my observation in the surgical clinic of Rush Medical College last winter.

Patient.—A tall, spare man, aged 65, suffered a fracture of the neck of the femur eight months before he sought the service of my clinic.

History.—The fracture was the result of a fall on the great trochanter and the injury was diagnosticated as a contusion. After the first day, the patient left his bed, and with the aid of crutches, used only for several weeks, has been on his feet ever since. He walks now with a decided limp, but without the aid of mechanical support.

Examination.—I found all the indications of an impacted intracapsular fracture of the neck of the femur which had united by bony union, an inch and a half of shortening, and outward rotation of the limb. The accompanying radiograph corroborates the correctness of the clinical diagnosis. Bony union of the impacted fracture is perfect (Fig. 5). The neck of the femur is shortened, but there is no diminution of its angle.

The Roentgen ray should be relied on in doubtful cases in confirming or correcting the clinical diagnosis. The Roentgen photogram should be taken from behind with the patient in the ventral position, and the tube 24 inches above the surface of the body. (Hofmeister.) In applying this, the most reliable and important diagnostic test, Kirmisson had to change his diagnosis four times in 7 cases, while in Hofmeister's 15 cases it confirmed the clinical diagnosis in all but one.

PROGNOSIS.

Coxa vara never becomes a direct source of danger to life. Left to itself and under the influence of conservative expectant treatment, it pursues the course of self-limited diseases and sooner or later ends in spontaneous recovery. The impairment of the functional result depends on the degree of deformation of the femoral neck. Some cases terminate in almost complete restoration of joint function, in others the extent of bending and torsion of the neck of the femur is such that permanent lameness and great impairment of joint function are the inevitable results. After cessation of the acute symptoms, the use of the limb often improves quite rapidly, just as after a fracture with vicious union, owing to the architectural changes for the better in the deformed neck which nature effects.

Hofmeister gives the ultimate functional results in 32 cases. All the patients recovered sufficiently to return to their former occupations, which certainly reminds us not to resort to operative measures prematurely, as undoubtedly has been done in some cases in the past. As in inflammatory flat-foot, the pain gradually disappears, after which a process of partial or complete restoration of function is initiated.

TREATMENT.

The general treatment in coxa vara is unimportant, if not useless. The subjects of this disease usually enjoy fair, if not perfect, health. It is a local affection, limited, so far as we know, to the neck of the femur, and the exact nature of which so far is unknown. As a number of weighty authorities are of the opinion that this local affection is a late manifestation of rachitis, the internal administration of minute doses of phosphorus would be theoretically indicated. I made use of this anti-rachitic drug in two of my cases with what I believed to have been a good effect, but they might have been comparatively mild cases, and the speedy and satisfactory recovery might have taken place without such medication. In patients infected with hereditary or acquired syphilis, the internal use of potassic iodid should not be neglected. The local treatment must have for its objects the relief of pain and the limitation, as far as possible, of the bending and torsion of the neck of the femur. Both of these indications are met by securing for the affected joint absolute rest. Rest in bed, combined with extension by weight and pulley, should be enforced as soon as a correct diagnosis is made. Bauer reports three cases from the Serafim Hospital, Stockholm; the patients, aged respectively 17, 17 and 16, were cured by baths and massage, in one case combined with extension continued for four weeks. Rest in the dorsal recumbent position combined with extension answers the indications more perfectly than any orthopedic appliances, and should be continued until the acute symptoms have disappeared. After the pain has ceased, the patient should make use of crutches for a number of weeks, and during this time the sole of the shoe on the opposite side should be raised at least an inch in order to secure auto-extension of the limb on the affected side. In the vast majority of cases, this simple expectant treatment will suffice in shortening the acute stage, and in preventing a maximum degree of deformity.

Until the active symptoms are fully under control, operative treatment is absolutely contraindicated. After the acute stage has subsided, baths, massage and electricity will be found useful in developing the atrophied muscles, and in increasing the range of joint motion. At this stage forced motion under narcosis may improve the functional result. The great improvement in the use of the limb, which is so often observed to take place spontaneously, is probably the result of a gradual modeling of the deformed neck into a more

normal shape. The surgeon should postpone all operative measures until he can satisfy himself that conservative treatment and nature's efforts have fallen short in restoring the usefulness of the limb. When this has been shown to be the case, various operative procedures suggest themselves. No one operation can meet the mechanical obstacles in different cases. Before any operation is planned, Roentgen photograms should be taken, showing the anterior and posterior aspects of the joint, as the conditions thus revealed will aid the surgeon in the selection of the operation suited to the case. Zehnder and Vulpius made use of section of the adductor muscles combined with *brisement forcé*, a method of treatment which at best has but a limited range of application. Kraske and Budinger advised the excision of a wedge-shaped piece of bone in the anterior convex side of the neck (*Keilosteotomie*) for the purpose of correcting the extreme outward rotation of the limb. Koenig condemns this operation, unless it can be made extracapsular, which is not often the case. Several disastrous results have followed this operation. Linear straight subtrochanteric osteotomy (Hofmeister) and oblique subtrochanteric osteotomy (Hoffa) have been practiced with success in a number of cases. Watson-Cheyne reports two cases, children six and a half and three years old, in whom he made a subtrochanteric osteotomy to correct the outward rotation. In one case Kocher made a subtrochanteric resection with a satisfactory result. De Forest Willard obtained a good result in an aggragated case by making a transverse intertrochanteric linear osteotomy. In very grave cases of deformity following this disease resection of the joint is favored by Hoffa and by Sprengel. In one of Hoffa's cases, the shortening of the limb was reduced from seven to three inches by this operation.

CHORIOEPITHELIOMA MALIGNUM.

WITH REPORT OF A CASE.*

P. BROOKE BLAND, M.D.

Instructor in Gynecology in the Jefferson Medical College of Philadelphia; Assistant Gynecologist to the Philadelphia and St. Joseph's Hospitals.

PHILADELPHIA.

I recently secured, in the service of Professor Montgomery, in his gynecologic clinic in the Jefferson Medical College Hospital, a tumor of the uterus which is comparatively new, of decided pathologic and clinical interest and worthy of permanent record.

Patient.—R. M., female, white, married, aged 31.

Family History.—One brother died of pulmonary tuberculosis and one maternal aunt of cancer of the uterus.

History.—The patient suffered all the diseases of early childhood; otherwise she had comparatively good health. She menstruated first in her eighteenth year, and the periods were always regular and somewhat painful. She was married at 18 and has had five labors. The first four were normal, but the fifth occurred at the eighth month and was hastened or produced, she states, by sustaining a rather severe fall. The last child died in six weeks.

Present Illness.—This began about six months before the admission to the hospital and four months after delivery. There was more or less vague and indefinite pain, of a dull, aching, boring character, in the lower portion of the abdomen. She suffered constant and increasing distress in the back and head. Two months prior to admission she suffered from rather a free serous and offensive vaginal discharge. During the past six weeks the discharge has greatly increased in quantity and occasionally is mixed with blood. The bleeding is also progressively increasing. The patient is extremely pale and anemic and has lost, she says, considerable flesh. She complains of extreme weakness and is easily fatigued. The urine report is negative.

Examination.—On bimanual examination the cervix is found to be large and soft. The external os and the cervical canal are open and admit the tip of the index finger. The uterus is apparently 2½ times its normal size, of about normal consistence and freely movable. The extrauterine tissues are palpably free from disease. A rather hard, circumscribed prominence was discovered in the right groin immediately below Poupart's ligament.

Operation.—May 19, 1904, Prof. E. E. Montgomery operated. The patient was prepared for combined operation, and before opening the abdomen the cervix was completely dilated and the interior of the uterus explored. A small amount of material was removed, and this so resembled malignant tissue that hysterectomy was decided on and was performed. The abdominal route was selected.

Pathology.—The uterus was 2½ or 3 times its normal size and of normal consistence. The enlargement was general and uniform, though nodulations could be defined in its interior. The uterine wall on incision was found to be thickened and showed the general changes found in chronic metritis. The tissue cut with normal resistance. On exposing the interior of the organ a large, irregular, nodular mass was found occupying the posterior and fundal wall. This was of a greenish "blood-coagula" color and of rather tense consistence. The

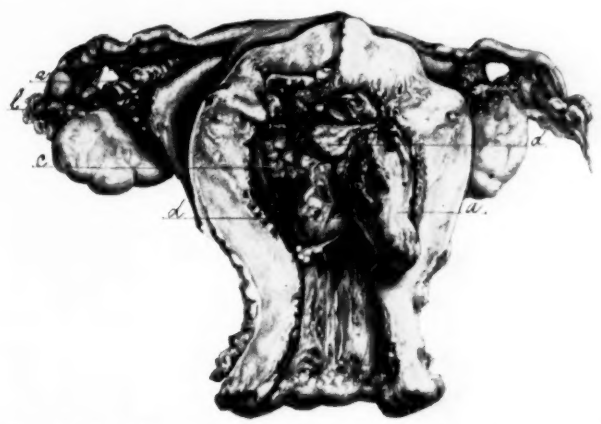

Fig. 1.—Drawing of gross specimen. a, Ovarian vein distended with organizing thrombus. Portion of thrombus protruding from the vessel. b, Round ligament. c, Tumor infiltrating mucosa and muscular wall. d, d, d, Three large nodules forming major portion of growth.

nodules varied in size from a pea to a man's thumb and were spread completely over the posterior wall. The mass did not show any line of demarcation between itself and the uterus, but apparently infiltrated the uterine wall to the extent of three-eighths of an inch. The mucosa surrounding the tumor was markedly hypertrophied. The tubes and ovaries did not show any pathologic alteration. The ovarian vein of the right side was distended by an organizing thrombus and a portion of this was protruding from the vessel after removal, as is shown in the accompanying drawing (Fig. 1).

Pathologic Histology.—On microscopic examination of stained sections of the growth several elements were found. The presence of chorionic villi in certain areas of the sections was decidedly marked, and a striking characteristic of these was the phenomenal, active disturbance of their cellular layers. In most of the villi the proliferation was most pronounced in the Langhan's cells (Figs. 2 and 3), and in many places these could be seen in several layers about the villi and apparently wandering in the acid-staining substance surrounding them. The cells varied in size, but all were moderately large and contained oval, well-defined, deeply-staining nuclei. In some of the cells active nuclear division was observed (Fig. 2).

The substance surrounding the villi stained deeply with the

* From the laboratories of the Jefferson Medical College Hospital.

acid stains and resembled bands of fibrils and whorls of protoplasm. In many areas large, pale nuclei were found, and in the others pronounced vacuolization was observed. These protoplasmic masses were occasionally broken by spaces which were possibly blood channels, as many of them were filled with blood cells. In portions of the sections, collections of very large, oval and round cells were seen. These cells were invariably congregated in masses and, as a rule, were found on the borderline of the blood channels. They were, as I have stated, extremely large and contained rather large, oval and prominent nuclei. Their protoplasm, as a rule, was pale, and in many instances very ill defined. These cells had the general appearance of the decidual cells. In some areas of the tumor leucocytic infiltration was observed, though not to a great degree (Fig. 3).

Subsequent History.—The patient was living and well eight months after the operation, without any subjective manifestations of recurrence of the disease.

GENEALOGY OF CHORIOEPITHELIOMA.

This tumor had been diagnosed clinically as carcinoma of the corpus uteri, but on further investigation, particularly with the microscope, its true character was determined. The different terms applied to this comparatively rare condition of the uterine body are deciduoma malignum, malignant bladder mole, sarcoma deciduo cellulare, malignant placental polyp, and numerous other rather indefinite terms. These names were applied to this growth in its early history, because it was thought in the earlier microscopic study of the growths that they were of decidual or maternal origin and belonged to the sarcoma family. The first important paper describing these tumors was contributed by Sänger[1] in 1889. At this time he described a case of malignant tumor of the corpus uteri possessing a sarcoma-like structure which followed an abortion at the eighth week. Sänger described this as a tumor belonging to the sarcoma family, developing from the decidua and, therefore, he applied the term deciduoma malignum. Sänger[2] later collected all analogous cases from the literature, 11 in number, and these, with his own case, made 12. A paper describing these cases was published in 1893. Among the cases collected by Sänger were 4 from the laboratory of Professor Chiari,[3] who in 1887 described 3 of these growths, pronouncing them cases of uterine cancer complicating pregnancy. Gottschalk,[4] in his contribution on the subject, possibly came nearer hitting the true character of these tumors as taught to-day. He described a case in which chorionic villi were present, and he found that there was quite marked cellular disturbance in the stroma of the villi and Langhan's cell layer. Therefore, he spoke of it as a sarcoma arising from the syncytium and Langhan's cell layer. Ludwig Frankel,[5] however, was possibly the first man to describe the cellular origin of these tumors, and he undoubtedly was the first to observe the proliferation of the syncytium and of Langhan's cell layer. Sänger in his paper regarded the decidual cells as the important elements of the malignant tissue; the chorionic structure he thought foreign or totally adventitious. Sänger's paper, however, was the instrument which directed the attention of the profession to the study of these growths, and shortly after its publication, in 1893, the interest of the profession throughout the world was aroused and several similar cases were reported, particularly in Europe, and one by Williams[6] in this country, in 1895.

Gottschalk, in 1894, published a paper in which he disapproved of Sänger's view of the maternal origin of these growths, and stated that he believed the disease arose primarily in the fetal tissues. From this assertion the old view of the destructive action of hydatidiform moles was revived; that is, that the fetal tissues have the power of invading and destroying the maternal structures. Frankel later (in 1895) reported a case of deciduoma malignum which he described as arising

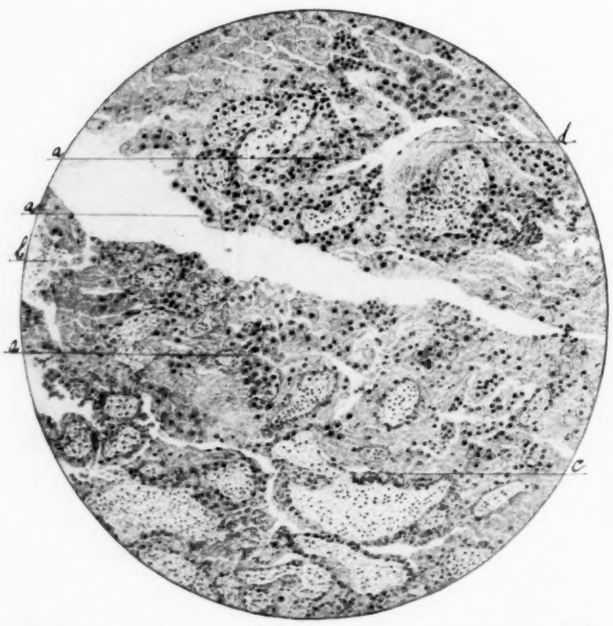

Fig. 2.—Low power microscopic section of tumor removed from its central portion. a, a, a, Large wandering decidual cells. b, Leucocytes. c, Chorionic villi showing marked disturbance in Langhan's cells. d, Non-nucleated protoplasmic masses.

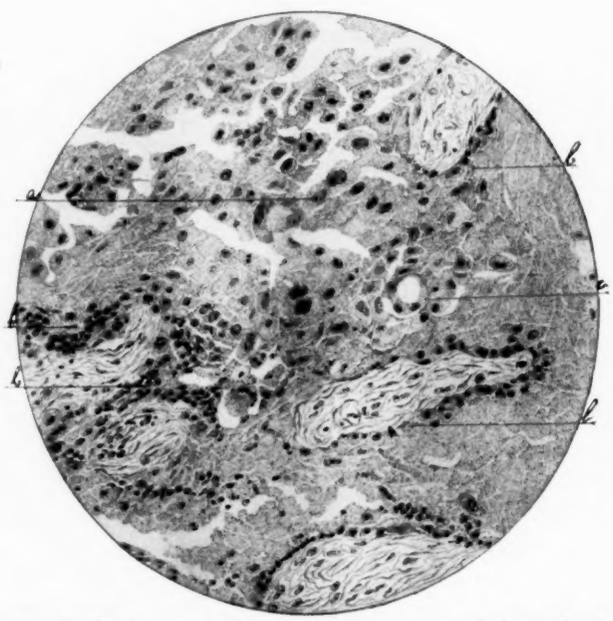

Fig. 3.—High power microscopic section removed from the tumor at its junction with the uterine structures. a, Collection of large decidual cells. b, b, b, b, Chorionic villi showing proliferation of their cellular covering. c, Large multinucleated cell containing a vacuole.

1. Sänger: Centlb. f. Gynäk., No. 8, p. 132.
2. Ib.: Arch. f. Gynäk., vol. xlvi, No. 1, 1893.
3. Chiari: Wiener med. Jahr. der Kinderheilkunde Gesell. der Aerzte, vol. vii, 1887.
4. Gottschalk: Berliner klin. Woch., No. 4, 1893; Arch. f. Gynäk., vol. xlvi, No. 1, 1894.
5. L. Fränkel: Arch. f. Gynäk., vol. xlviii, 1895.
6. J. W. Williams: Johns Hopkins Hosp. Rep., vol. iv, No. 9, 1895.

from the syncytium, a structure which he thought was derived from the uterine epithelium. In the same year, 1895, Marchand[7] contributed an article claiming that these tumors originated in the two-celled covering of the chorionic villi. In the same year, Williams also recognized the relation of these growths to the chorionic epithelium. He recognized and described Langhan's layer of cells, but considered the syncytium the important element in the growth, and the latter, too, he was rather persuaded to believe of uterine origin. The writers of the present day nearly all seem to agree with the theory set forth by Marchand that these tumors are of chorionic, fetal or ovular origin. Many of the cases that were originally reported as malignant bladder mole, sarcoma of placenta, and sarcoma deciduo cellulare, etc., have been carefully re-examined and found to be true chorioepitheliomata. This work has been done since Marchand published his observations as to the character and origin of the "so-called decidual tumors and hydatid mole."

Veit,[8] however, still continues to adhere to his original view that the disease is of maternal origin, and that a tumor of the character of the chorioepithelioma could not arise from fetal tissues. He therefore maintains that the old term deciduoma malignum is correct. He still claims, furthermore, that the primary disease is a sarcoma of the corpus uteri, which is cellularly modified, or given special features, such as syncytial conformation by some of the cells, by a superimposed pregnancy. In the strength of his argument, Veit cites the history of a tumor of this nature which he removed and which resembled strikingly a deciduoma. The tumor showed many villi with actively proliferating epithelium and many large cells (many polynucleated) in the circumjacent uterine tissues. These he regarded as sarcomatous cells of maternal origin and as the essential elements of the disease. The presence of villi Veit does not regard of importance, and he states that their existence is merely an accident of the existing gestation. Veit claims that he has never observed the infiltration of fetal elements. He would, however, regard the demonstrable infiltration and destruction of tissue by fetal cells as high evidence of malignancy. He also admits that the similarity between the large cells interspersed with the maternal tissues of the normal placenta, or an adjacent deciduoma, or the cells of the chorionic epithelium, or the cell masses of the tumor, are strikingly exact, but he does not believe, however, in the genetic continuity existing between the two.

As a rule, most late observers have but little difficulty in tracing the genesis of these cells. Teacher,[9] in his discussion of chorioepithelioma before the London Obstetrical Society in 1903, stated that he was able in all his cases to demonstrate the origin of these cells very plainly. Furthermore, he asserted that he was able to demonstrate also their destructive action. The distinctive difference between Veit's and Marchand's theories, histologically, is that learned in the different significance attached to the cellular elements composing the tumor. Veit,[10] in his paper on the deportation of chorionic villi, eludes this question when he reaches the relation of that process to deciduoma malignum. Teacher, in personal conversation with Professor Veit, learned that, though he were forced to admit that these cells were not sarcoma cells of maternal origin but were derivatives of the chorionic epithelium, the theory which we now, in this country particularly, have almost generally accepted, he would, nevertheless, still hold that some pathologic condition inherent in the mother preceded the diseased condition of the ovum. This, Teacher, in his discussion before the London Obstetrical Society on chorioepithelioma, says may be even so, but, notwithstanding, it does not disprove that the elements which enter into the tumor formation are fetal.

Horrocks,[11] in discussing Dr. Teacher's paper, states that from his personal study of several cases of deciduoma malignum, he does not believe we are in a position at present to say that all cases are either of maternal or of fetal origin. He believes, with Lockyer[12] and others, that there are two kinds of malignant tumors associated with pregnancy: one of decidual (maternal) origin of the sarcomatous type, for which he thinks deciduoma malignum the proper term, and the other chorioepithelioma of fetal (ovular) origin of the carcinomatous type. This stand is taken by King[13] in a paper read in Washington, February, 1904.

Marchand's theory is the one now most generally accepted, for he has demonstrated clearly the relation of the protoplasmic masses of the tumor with the syncytium and the relation of the individual cells with those of Langhan's layer. Peters[14] also has observed the true genesis of the epithelial layers of the chorion. He demonstrated that the syncytium and Langhan's cells are derived from the ectoderm; therefore it follows that these tumors are undoubtedly entirely fetal or ovular in origin, and arise from a malignant proliferation of the two layers of the chorionic epithelium.

In reviewing the history of the so-called deciduoma malignum, I have found that the term had been applied to conditions of the uterus characterized by hyperplastic states of the decidua, to tumors of the decidual structure, all of which were of unknown character, long before the publication of Sänger's paper, by Maier,[15] Küstner,[16] and Klotz.[17] The malignant tumor, however, now under consideration, had never before the publication of Sänger's paper been definitely differentiated from other malignant tumors of the corpus uteri, and to him alone belongs the honor of pointing out their distinctive family relation. Gebhard reported 3 cases of chorioepithelioma in 1897; in all of these the characteristic cellular elements and syncytium were found present. The second case strikingly demonstrated the cellular origin of the tumor and in every way confirmed Marchand's theory regarding the genealogy and the relation of the tumor cells. Gebhard found in the wall of the uterus, far from the main growth in his second case, a villus from the surface of which the chorion or ectodermal cells could be demonstrated.

NOMENCLATURE.

With the genealogy of these growths definitely established, it would seem that their distinct relation and a definite terminology should be accepted universally; but

7. Marchand: Monat. f. Geburt. u. Gynäk., vol. I, June, 1895; Monograph, No. 1, 1903.
8. Veit: Volkmann's Sammulungen klin. Vort., No. 254, 1885; Zeits. f. Geburt. u. Gynäk., vol. vi, 1886; Zeits. f. Geburt. u. Gynäk., vol. xxxii, No. 1, 1895.
9. Teacher: Trans. London Obs. Soc., June 3, 1903.
10. Veit: Handbuch der Gynäk., vol. iii, No. 2, Wiesbaden, 1899, p. 538.
11. Peter Horrocks: Brit. Med. Jour., Oct. 5, 1902.
12. C. Lockyer: Trans. London Obst. Soc., January, 1902.
13. King: Trans. Washington, D. C., Obstet. Soc., February, 1903.
14. Peters: Centralb. f. Gynäk., No. 29, 1902.
15. Maier: Arch. f. Gynäk., vol. xxxiii, 1888.
16. Küstner: Arch. f. Gynäk., vol. xxxiii, 1881.
17. Klotz: Arch. f. Gynäk., vol. xxix, 1887.

even now, despite the almost universal acceptance of Marchand's theory as to the genesis of these tumors, there is still considerable discussion over the nomenclature of these growths, many investigators still clinging to the term deciduoma malignum, while others, and the majority, too, now accept the term chorion epithelioma, or, more recently, chorioepithelioma. Teacher considers syncytium a bad name, because the syncytium is not the characteristic element of the tumor. The most characteristic thing I have endeavored to point out in this paper is the physiologic prototype. Teacher, in his paper, favors the term which will indicate some origin of the tumor and believes that chorioepithelioma malignum is the best. He does, however, also favor allowing the term deciduoma malignum to remain as a clinical name. Moreover, the term, he says, has been so completely abandoned that it has ceased to be misleading.

PATHOLOGY.

The tumor, as a rule, follows pregnancy, abortion, or the expulsion of an hydatidiform mole. Indeed, it has been learned that almost 50 per cent. of the cases of hydatidiform mole has been followed by chorioepithelioma. Metoz[18] collected 98 cases of chorioepithelioma from the literature and found in this number 48 preceded by hydatidiform mole. In Teacher's collection of 188 cases, 73 were preceded by mole.

The tumor usually is situated within the uterine cavity, though cases have been reported where the growth has occurred primarily in the vagina. Again, it has occurred primarily in the Fallopian tube, following a tubal pregnancy. It has also been reported to have been observed primarily in the ovary, and also in the brain. These are all possibly cases in which deportation of the chorionic elements has occurred prior to labor, as almost every instance of cases thus recorded has occurred soon after parturition. Busse[19] reported two cases of the disease in which the tumor developed primarily outside the uterus. In one it occurred in the left ventricle of the heart, with secondary deposits in the lungs, brain, kidneys, liver, spleen and intestines; in the other the disease developed in the parametrium, vagina and lungs, the uterus remaining entirely free. These may be instances of the deposition of elements of the chorion prior to the termination of the pregnancy, which developed a malignant change after its completion. Devitski[20] also reports a case of the condition occurring primarily in a virgin 75 years of age, with secondary growths in the lungs, liver and spleen. Steinert[21] reports an instance of embryonal tumors of the genital glands occurring primarily in the testicle, containing pavement and cylindrical epithelium, smooth muscle fiber and chorioepitheliomatous elements, particularly the syncytium and Langhan's cells. When the tumor is situated in the uterine body it is, as I have observed from my own case and from those recorded in the literature, situated in the fundal region and in the posterior wall. The growth varies in size; in some instances it can scarcely be palpated and in one case recorded it was felt as a simple scar, while in the same patient universal metastases were observed. Therefore, the dimension of the growth does not in any way speak either of the benignity or malignancy of the tumor, but it would seem that those characterized by large size are less malignant and vicious than those of small size. The large tumors, too, usually contain chorionic villi, and these, as I have stated, appear to run a milder and calmer course than those of wholly cellular composition.

The tumor may be large, however, and may fill the entire uterine cavity, even dilating the interior to a considerable extent. Croom[22] reports a case of chorioepithelioma malignum in which the tumor weighed 7½ pounds. The uterus itself varies extremely in size. It may be small or apparently of normal size, depending, of course, on the size of the growth. In some of the cases which I have studied it extended to the umbilicus. The growth itself, in almost every instance, in the early stages is irregularly nodular. In this stage it is more or less firm and imparts to the tactile sense an impression of a fibroid tumor. Later, as hemorrhage takes place into the tumor substance, from the penetration of blood vessels by the chorionic villi, and the erosion of the vessel walls, it becomes softer and somewhat friable, and in the still later stages necrosis and sloughing take place, and then we simply find a scooped-out, sloughing ulcer occupying a site in the uterine wall.

In the early stages the growth confines itself to the superficial portion of the lining membrane of the uterus, though at no time is there a sharp line of demarcation between the malignant structure and the uterine wall, as is seen in placental polypus or in cases of retained placenta or membranes.

As the tumor ages, penetration of the mural portion of the uterus occurs, and even in the early stages on microscopic examination the wandering malignant cells will be found between the uterine muscular tissue, and penetration of the wall may take place. In a case recorded by Noble[23] and in one by Hirschman the uterine wall had been completely perforated and the wall of the bladder in each case was involved.

The tumor structure before necrosis and ulceration take place might conveniently be divided into three portions: The basal portion or that portion in juxtaposition to the uterine structure, and the true, active, live portion of the growth; a second and middle portion or body which is composed of blood clot and necrotic tissue, wandering cells and fragments of chorionic villi; a third, the outer or free marginal portion or that portion free in the uterine cavity, composed of a capsule-like membrane. In the early stages this is of a smooth grayish-pink or grayish-green color, while the middle portion is more of a dark blood-coagula color.

METASTASIS.

One of the most remarkable characteristics of chorioepithelioma in the terminal stages and in some cases in the comparatively early stages, is the tendency to early metastasis to other viscera; and from the study of my collection of cases, in several instances, symptoms of metastases were the first manifestations of the disease, and suggested the possible existence of an intrauterine chorioepithelioma. In one patient the first evidence of the disease was cerebral irritation and later right-sided hemiplegia. In other cases the presence of the disease was first manifested by coughing, pleural pain and hemoptosis, thus indicating the presence of malignant emboli in the lungs. In several cases, too, the growth was first discovered in the labia and vaginal walls and the symptoms of the condition first directed to these structures. Of course the disease, as will be seen, occasion-

18. Metoz: Rev. de Gynecol., Paris, vols. iv and v, 1901.
19. Busse: Virchow's Arch., Nov. 4, 1903.
20. Devitski: Med. Obosreni, vol. lvi, No. 5, 1904.
21. Steinert: Virchow's Arch., Nov. 4, 1903.
22. Croom: Med. Press and Cir., June 25, 1902.
23. Noble: Amer. Jour. Obst., vol. xlvi, No. 3, 1902.

ally apparently occurs primarily in these structures. The unusual tendency to widespread metastasis is undoubtedly due to the greatly increased vascularity in the organs of the pelvis, as a result of the pregnancy. The vessels, we know, at this time are multiplied and enlarged and, therefore, readily receive and convey the chorionic elements throughout the body. Of course, it is not improbable, as I have pointed out, that deposition of the chorionic structure takes place prior to the termination of the pregnancy.

LOCATION.

The tumor, as a rule, is primarily situated in the uterine cavity, though cases are recorded, 9 in number, in which the disease occurred primarily in the vagina. It may be primary, also, in the Fallopian tube, following a tubal pregnancy or tubal mole. The organs most frequently involved in metastatic deposits are the lungs, vagina, kidneys, liver, brain, spleen, ovaries, intestines, broad ligaments, pleura, mesenteric glands, pancreas, heart, stomach, and pelvic lymphatic glands. Lymphatic gland infection, however, seems to be extremely rare. In my collection of cases, one instance is recorded in which the disease was first recognized by an apparent involvement of the left inguinal glands. This was first thought to be an adenitis, but incision into the tumefaction liberated a large quantity of bloody fluid, and sections taken from the diseased area showed the characteristic morphologic construction of the structure. In another case in my collection the pelvic lymphatic glands were involved. There are only 7 cases recorded in literature of lymphatic gland involvement; this, of course, is due to the fact that the malignant cells are invariably deported by the hemal circulation and rarely through the lymph channels. E. Seifert,[24] from his study of chorioepithelioma malignum, states that in those cases in which metastases are formed the brain is involved in about 10 per cent.

PATHOLOGIC HISTOLOGY.

On microscopic examination of these structures, different elements will be recognized. In some, nothing but large decidual cells, blood detritus and blood sluiceways will be found, while in others chorionic villi with their characteristic structure with proliferation of the Langhan's layer of cells and syncytium will be seen, a picture observed in my case. A characteristic of the cells is their great tendency to undergo modification. In certain areas, cells undergoing various degenerative changes will be noted, while in others a state of extreme cellular activity will be seen. Teacher says that in the study of chorioepithelioma it is very essential for proper appreciation to have material which shows the growing zone of the tumor and the stages of cell metaplasia or cell division. In such a part he states that three principal cell forms will be found. The syncytium, large masses of protoplasm of various shapes, rounded, drawn out bands and whorls or irregular masses. These are very frequently vacuolated and may contain blood, as will be noted in the case I have reported. These syncytia or so-called plasmodia contain numerous nuclei. In nearly all instances these will be found to stain deeply and uniformly. The protoplasm of the cells is opaque and stains deeply with plasma stains. Karyokinetic figures are not found. Assemblages of cells are also seen growing in intimate relation with the syncytium. In the early stages the cells are small, well defined, and pack closely together. There is no stroma between them. The nuclei of these are round or oval and stain moderately deeply. Nuclear activity in these cells is always characteristically well marked. The protoplasm is pale and clear. In some cases it is delicate, too, and finely granular and stains but thinly with the plasmic stains. These cell masses are frequently found within the syncytium. They may show a border of syncytium resembling endothelium. A characteristic feature of the tumor on microscopic examination, in case the chorionic villi are present, is that the cells which I have described will be recognized as developing from the syncytium, the other cells from the second layer of cells covering the chorionic villi or Langhan's cells. Modifications and intermediate forms of the above cells, of course, are often seen.

The individual cell, Teacher claims, is rather the primitive form and the syncytium is a modification of it. He classifies the intermediate forms and the various infiltrating cells together as the first cell type. Teacher found the tumor cells usually assembled in masses of some size and attached to the uterine tissues. This is strikingly demonstrated in the case under my observation. These assemblages of cells are really the active portion of the tumor and the tissues external to these layers or collections of cells or that occupying the free uterine cavity is made up of lymphatic tissue and blood clot, as a rule; hence, the peculiar gross appearance of these tumors. The blood clot seems to be a characteristic feature of the growth, and it seems to be due to the growing and proliferating tumor eroding the vessels and causing hemorrhage into its substance proper. This is of the utmost importance, for in doing a test curettage for diagnostic purposes we often secure only the outer portion or degenerated portion of the growth, and, therefore, may be led astray as to the true character of the tumor on microscopic examination. It is important, therefore, in doing a curettage for diagnostic purposes to be sure of removing tissue in contact with the uterine wall. In the cell masses described under connective tissue, no blood vessels are present, as a rule.

LINE OF INVASION.

A peculiar and characteristic feature of chorioepithelioma is that the line of invasion differs distinctively from that of carcinoma. In chorioepithelioma the process is a destructive one, while in carcinoma there is usually a reactionary zone of inflammatory material and invading cells, giving rise to the indurated base, so characteristic of carcinomatous tumors. This, as you know, is nature's method of throwing up breastworks of defense to halt the invading army of malignant cells.

The relation of the degeneration of the muscular structure of the uterus to the tumor cells has been a subject for much discussion. In nearly all instances, some of the cells are found interspersed between muscular fibers in such a manner as to lead some investigators to believe that they are really degenerating muscle cells. It has been demonstrated, however, that true myomatous degeneration does occur and it is also firmly established, as I have pointed out in preceding paragraphs, that the neoplastic cells are found infiltrating between the muscle fibers, and it is by their action that fibrillar degeneration takes place. In my specimens I was able to locate a few choriomatous cells in the intermuscular spaces, but I did not recognize any degeneration of the muscle fibers.

24. E. Seifert: Arch. f. Psych., No. 1, 1904.

OTHER NEOPLASMS CONTAINING CHORIOMATOUS CELLS.

In this connection, I desire to call attention to a class of tumors recently described as containing cells from the second layer of the chorionic villi, or Langhan's cells, and in some instances also elements of the syncytium. These have been described under the terms embryomata, teratomata, etc. Pick[25] has recently described a tumor of this kind occurring in the ovary of a girl 9 years old, which he designates chorioepithelioma ectodermale. Landau reports 5 similar cases all occurring in young individuals. These growths were all vicious, and characterized, like the chorioepithelioma ta, by early metastasis. Ritchie[26] described a tumor of this character occurring in the mediastinum of a man, and Andrews[27] reported a case of an endosteal tumor of the femur, showing syncytial structures. Numerous other similar cases have been recorded. These tumors, as is known, are developed from the three embryonal layers.

Much discussion has arisen as to the proper classification of these growths. Fothergill[28] objects to the tendency of classifying these embryomata or tumors occurring in moles and others independently of pregnancy, but containing chorionic elements and the chorionic epithelium of pregnancy, under the same nomenclature. He says that even though they all be of fetal or of ovular origin it would be better to adopt a nomenclature which would distinguish those closely connected with gestation and those arising independently of it. He further says in support of his argument that "It is plain that a mother invaded by the trophoblast of her own child would be a person of one generation killed by the tumor in a person of the next generation—matricide, in fact, but a man killed by an embryoma of the testicle would be a victim, not of his own child, but a potential brother or sister, fratricide," a condition altogether different and worthy of an individual name.

ORIGIN OF THE SO-CALLED TERATOMATA.

Many theories are advanced as to the origin of these tumors, and we are still somewhat in the dark as to a proper classification, although these are the only growths of whose etiology we have a little certain knowledge. Galabin[29] does not believe that their derivation lies in an included ovum, a brother or sister of the unfortunate being who bears it. Such an imperfect or undeveloped being is usually, as is well known, attached to the surface, and there is no valid reason, he says, why they should be in the testis or ovaries. He believes that they are evidence of imperfect parthogenesis, or attempt at development of the germ elements without union of the sexes. This theory, however, is not considered by most authors, and the Marchand-Bonnet theory of fetal inclusion is now generally accepted. Pick and Landau also incline to this theory and they both have been able to trace the origin of these growths to the three embryonal layers. They found that, in some, certain layers would develop so rapidly as to completely obscure others, and for this reason the genesis of the teratomata was not properly understood. The existence of chorionic elements in certain cases of sarcoma has been set forth as an objection to deciduoma malignum. These, however, are found only in cases of embryomata, and this does not argue against their ovular origin, but favors the theory of deciduoma malignum, being derived from the elements of the fertilized ovum. It must be remembered, too, in this connection that Schmorl and Veit have shown that normal villi and fragments of chorionic epithelium are deported through the blood channels, either arteries or veins, to distant organs and there undergo destruction and become absorbed, or stop and give rise to a malignant neoplasm. This class of cases I have referred to. They were first brought to the attention of the profession in 1896 in the discussion of deciduoma malignum in the Obstetrical Society of London, in describing syncytial masses occurring in a malignant growth of the testis.

Schlagenhaufer[30] later reported a case which was undoubtedly a teratoma, and this was one of the first theories advanced to destroy the theory of Marchand as to the origin of the chorioepithelioma. Schlagenhaufer thought that a large proportion of the deciduomata occurring in the uterus and elsewhere should be regarded as teratomata, and due to the inclusion of an ovum.

ETIOLOGY.

In considering the etiology of chorioepithelioma or malignant disease arising from the chorionic epithelium, we are at once struck by the interesting phenomena associated with the causation of the condition. It is now thoroughly established that pregnancy is an absolutely essential factor in the production of these malignant tumors. It will be found in all cases thus far recorded that some form of gestation has preceded the malignant process, except in the case recorded by Paviot[31]; and this tumor, we have learned, was of doubtful pathologic character. Ladinski[32] says that there is no case recorded where the disease manifested itself outside the parturient age. In my collection of cases, however, I observed one instance of the malignant disease developing after the establishment of the menopause, the patient being 58 years of age.

In 128 cases collected by Ladinski, in which the nature of the pregnancy was recorded, 51 followed hydatid mole, 42 followed abortion, 28 followed labor at full term, 4 followed premature labor, and 3 followed tubal pregnancy. In 40 per cent. of these cases, therefore, it will be seen that the disease followed a molar pregnancy. In Williams' collection of 26 cases, 11 followed hydatid moles, 6 followed full-term pregnancy, 5 followed abortion, 1 followed tubal pregnancy, and in 3 of the pregnancies the true character of the pregnancies was not known. In the 198 cases collected from the literature by Teacher and reported before the Obstetrical Society of London in 1903, 73 followed mole, 59 followed abortion, 49 followed full-term pregnancy, and 7 followed tubal or ovarian pregnancy.

It is seen, therefore, that the relation of hydatidiform mole to chorioepithelioma is very significant, but the relation has not been satisfactorily explained. Hydatidiform mole itself is not, as first pointed out by Virchow, a myxomatous degeneration of the chorionic villi. It is, as more recently explained by Marchand, a proliferation of the syncytium and of Langhan's cells, causing mechanical dropsy of the chorionic villi. The cause, however, of the formation of mole can not be definitely asserted to be due to pathologic changes either in the ovum or in the uterus. Chalensky is persuaded that the death of the embryo is brought about and the cho-

25. Pick: Berlin. klin. Wochft., No. 51, 1902.
26. Ritchie: Trans. London Obst. Soc., June 3, 1903.
27. Andrews: Trans. London Obst. Soc., June 16, 1903.
28. Fothergill: Trans. London Obst. Soc., June 16, 1903.
29. Galabin: Trans. London Obst. Soc., June 16, 1903.
30. Schlagenhaufer: Wiener klin. Wochft., Nos. 22 and 23, 1902.
31. Paviot: Ann. de Gynecol., et d'Obst., vol. xii, 1904.
32. Ladinski: Amer. Jour. of Obst., April, 1902.

rion, therefore, receives in consequence increased nutrition previously intended for the fetus, thus causing the proliferation of the chorionic elements. Marchand refutes this view on the ground that if this were the proper explanation molar pregnancy would occur more frequently. Ludwig Fränkel has brought forth the theory that ovarian adenocystomata must be considered as factors in the production of hydatid moles, as in a number of cases recorded bilateral ovarian adenocystomata were observed. This has been noted in 9 cases. Fränkel claims that in ovaries affected with cystic disease the activity of the corpus lutea and their secretion is destroyed, and that the influence of the latter being withdrawn from the ovum causes it to become diseased and to form a hydatid mole. Pick, however, asserts that in cystic disease of the ovaries there is an excessive production of the lutein secretion, which is deleterious to the ovum and results in an hydatid formation.

Jaffe[33] also believes, with Pick, that the overproduction of corpus lutean secretion is one of the principal factors in the causation of this condition. He reports a case of ovarian tumor which developed 2 months after the discharge of a hydatid mole. This proved to be a chorioepithelioma. The right ovary, which was as large as an apple, showed the same structure. In both these tumors, multiple corpus lutea cysts were present, a condition which has been noted by many observers to accompany hydatid pregnancy. He believes, therefore, that there is a direct causal relation between the two conditions and states that an excess of corpus lutea material in the blood leads to the increase of trophoblasts, and hence the chorioepithelial development in the uterus. Recasens,[34] in considering the etiology, holds that the fetal ectodermal structures possess normal and specific malignant character, which, however, is generally neutralized by secretion of thyroid substance or secretion from the ovary. Therefore, if for any reason the normal secretion of these glands is arrested, abnormal development of the fetal structure occurs.

TIME OF OCCURRENCE.

It has been found that the average duration of time following the molar pregnancy and the manifestation of symptoms is about 4 months. This varies; in some of the cases in my collection the symptoms became manifest immediately after the expulsion of the growth; but the time of the development of the symptoms in all cases of molar pregnancy from my observation must be measured by days or weeks, not by months. In Ladinski's collection, the longest recorded time after the expulsion of the mole was nine months. Race has no influence in the development of the tumor; in cases from my collection it has occurred in all nationalities. Hydatid mole frequently follows an old endometritis. Menu[35] found only 12 cases in 79 in which a hydatid mole had occurred without a preceding childbirth in which the above condition existed.

Gottschalk, in discussing the pathogenesis of chorioepithelioma, says that they are absolutely avascular, and states that the growth is nourished by osmosis from maternal venous channels into which the growth dips. He is persuaded, therefore, that this one-sided and exclusive nutrition with venous blood is the cause, the only important one, of the malignant transformations. He states furthermore that there is possibly an accumulation in the nuclein of the cell nuclei of substances having a chemically toxic action, which also acts as one of the fundamental causes in the production of this condition.

Herbert Snow,[36] in discussing the etiology, says that they may be growths due to altered cells of other malignant disease during preparation for study. He believes that the malignant process has already been grafted on the uterine wall before pregnancy takes place and that the malignant process does not follow that condition. Many others believe also in this same theory, for it was recognized in Williams' case that metastases were noticed in less than two weeks after a full term labor. This view, Teacher says, is not inconsistent with the development of the tumor after labor, for it is possible that thrombi could be carried into the parts containing malignant cells and tumor formation rapidly develop.

Another theory advanced as to the etiology of these malignant neoplasms is one fostered by Ehrlich's side-chain theory. That is that an organism has the power to produce anti-cells or anti-bodies which are endowed with influences to prevent the excessive proliferation of chorionic elements and combat and render inert or destroy invading foreign cells, and, therefore, prevent choriomatous formation, but when the power of the patient to produce these bodies fails, undue proliferation of chorionic cells occurs and chorioepithelioma results. Veit and Scholten[37] have applied the term syncytiolysin to this body. Therefore, if during the pregnancy or labor chorionic cells or even portions of villi become detached and deported to other portions of the body, they disappear or are rendered entirely inert, provided the syncytiolysing power of the individual is normal. This theory would seem to explain the occurrence of cases of benign metastases, and also why metastases disappear after removal of the primary exciting focus. In this class of cases there is an excessive production and deportation of chorionic elements, which overwhelms the organism and destroys its syncytiolysing power, but after the removal of the provocative focus, and, therefore, after the withdrawal of the source of supply of the chorionic elements, the invaded organism recuperates, and anti-bodies are again rapidly manufactured, and attack and render innocuous the malignant deposits.

This theory would also seemingly explain those cases of spontaneous recovery reported. According to Ehrlich, the influence of these anti-bodies is not a specific one, and for the syncytial cells only, but for any bodies in which they find attractive receptors. The power of the anti-bodies seems to be to dissolve wandering embryonal cells and the dissolving influence of the syncytiolysins on the placenta has been demonstrated by Veit.

AGE.

It will be seen that in chorioepithelioma the disease becomes manifest earlier than any other form of malignant disease. Carcinoma and sarcoma, as is well known, occur near or after the menopause, though certain forms occur earlier, but the maximum incidence of carcinoma and sarcoma is near the menopause. The maximum incidence of chorioepithelioma, however, is in the second and third decades, as pointed out by Lad-

33. Jaffe: Arch. f. Gynäk., vol. lxx, No. 3, 1904.
34. Recasens: Revista de Med. Y. Cir. Pract. Centralb. f. Gynäk., No. 18, 1904.
35. Menu: Rev. de. Gynecol., Paris, vols. iv and v, 1901.
36. Herbert Snow: Brit. Gyn. Jour., August, 1902.
37. Veit and Scholten: Zeits. f. Geburt. u. Gynäk., vol. xlix, 1903.

inski. His collection of 124 patients gave an average of 32 years. This corresponds, he says, to the generally accepted age of reproduction. The youngest patient observed in my collection of cases was 17 years; the case was one of tubal gestation and was reported by Marchand. The oldest patient in my number of cases collected was 58 years. The average age of women suffering from carcinoma of the uterus is stated as 54 years. It is seen, therefore, that age bears a direct influence in that the disease occurs during the active reproductive life. In nearly all my cases, the condition occurred in patients who had previously borne children, ranging from 1 to 11 labors. The average number of pregnancies recorded in a collection of 98 cases was 4.2.

The lapse of time between the termination of the pregnancy and the manifestation of the symptoms varies somewhat. In some cases the symptoms are progressive from the time of the labor. Indeed, in one case observed in my collection, symptoms began before the termination of the pregnancy, that is, bleeding. This, however, may simply have been a coincidence and not a manifestation of the disease. As I have stated before, however, the time in the majority of cases must be counted by days and weeks, not by months. One patient in my collection, who had one normal labor at the age of 26, was free from symptoms for 6 years before the disease manifested itself. In another patient of 24, the disease did not begin until two and one-half years after the completion of a normal pregnancy. The duration of the time existing between the completion of the labor, whether it be mole, abortion or normal labor, and the evidence of symptoms does not seem to be influenced either by a mole pregnancy, an abortion or a normal pregnancy. The average lapse of time in Ladinski's collection of cases was 8 weeks, 7 weeks and 5 weeks after a mole pregnancy, abortion, or a labor at term, respectively. McCann[38] also reports a case occurring after the menopause. Marchand explains these phenomena of a long period of latency by citing the fact that portions of epidermis are often included in the closure of some of the embryonic clefts. These, as we know, may remain quiescent, 10 or even 20 years, and then, for some unaccountable reason, suddenly spring into activity and form neoplasms. Marchand thinks, therefore, that it is not strange to find the trophoblast lying dormant for a varying period of years and then suddenly becoming active. Croom found in cases he collected from the literature that the average time for the development of symptoms after normal labor was 6.9 weeks; after abortion, 11.4 weeks; after mole, 10 weeks.

MALIGNANCY.

An interesting question in the study of chorioepithelioma, and one which is not perfectly understood, is why these growths vary so greatly in malignancy. In some cases we find the patient succumbing before operative interference is instituted, or the mother of a few days or a few weeks, while in others we find that the patient recovers after a simple curettement, and, indeed, in some spontaneous healing is asserted to have occurred, and in others, despite the evidence of metastatic deposits in other viscera, we find patients recovering after radical operation. In the large majority of cases, however, we find that the behavior of chorioepithelioma is characterized by the highest type of malignancy. Death is usually the ultimate result. It is found that in cases in which villi are present a lower degree of malignancy exists. It is further stated that primary growths in the vagina are less malignant than when located in the uterus, though from the study of my cases this assertion does not hold good. In 9 cases reported in which the tumor was located primarily in the vagina, early dissolution occurred in all. Another question of extreme interest is why metastases should disappear after the removal of the primary exciting focus and why, as in cases reported by Noble and Herschmann, partial removal of the primary growth should be followed by the disappearance of portions which have infiltrated, as in Noble's case, the bladder wall, and which could not be removed. These phenomena are possibly explained by Ehrlich's side-chain theory. McCann, in his study of cases, believes the polypoid or circumscribed form of the chorioepithelioma less malignant. I believe this inference to be drawn from the fact that a tumor presenting such a conformation is only observed in its incipiency, and, therefore, if proper treatment be instituted, a good result may obtain.

CLINICAL SYMPTOMS.

In describing the symptoms of chorioepithelioma we might conveniently divide them into two stages: 1, the incipient and formative stage; 2, the terminal stage or stage of metastasis and absorption. The symptoms in the incipient stage of the disease are first manifested by bleeding. This is an invariable symptom and usually is the first to attract attention. It appears without any cause, and is very irregular. In some instances it may be scanty, while in others it may be extremely profuse and serious. A characteristic of the bleeding of chorioepithelioma is that it is not alleviated by ordinary means of treatment. In all the cases in my collection the patients were, in almost every instance, curetted, and this seemed only to aggravate the condition, or only to control it temporarily. In one or two cases a simple attempt at examination was followed by extensive hemorrhage and profound collapse, the hemorrhage being controlled and the life of the patient saved only by immdiate packing and resort to stimulation. The hemorrhage in some instances is continuous, while in others it appears at irregular intervals and varies in quantity. During the period of quiescence, a thin, watery discharge is usually complained of. As the disease progresses, bleeding becomes more pronounced from the erosion of the vessels. Necrosis of the tumor takes place and a foul, profuse discharge is present. In the early cases reported, pain was not recorded as a symptom, but in the later observations this was almost invariably present. It is of a crampy, boring character, situated in the lower portion of the abdomen. In my own case, and also in the case recorded by Ladinski, in April, 1902, pain was the first symptom complained of. Anemia and emaciation are quite marked in all. In the case under my observation the patient had lost several pounds before admission to the hospital. Prostration is also quite profound.

In the second stage, the stage of metastasis and absorption, all these symptoms become more pronounced. Should involvement of the lung, which is the most frequent organ affected by metastatic deposits, occur, pain, cough, hemoptosis and pleural friction sound and areas of consolidation may be manifest. Metastatic deposits in the brain would be evidenced in the first stage by cerebral irritation, later by paralysis. Deposits in the kidney give rise to pain, and possibly to hematuria. During the absorption stage there are, of course, taken

38. McCann: Brit. Obst. and Gyn. Jour., No. 281, 1901.

into the human economy products of necrosis, and therefore symptoms of sepsis and exhaustion, such as sweating, elevation of temperature from 100 F. to 103 F., rapid pulse, nausea and vomiting will be present. In the terminal stages of the disease, malignant cachexia also becomes quite marked. If penetration of the uterine wall occurs, the bladder or rectum may become involved, and, therefore, symptoms referable to these organs will be present.

PHYSICAL SIGNS AND DIAGNOSIS.

The diagnosis of chorioepithelioma from our present knowledge of the condition should be comparatively easy. Taking into consideration the characteristics of the preceding clinical history of a normal labor, abortion or tubal pregnancy, or molar labor, followed by the symptoms above enumerated, should lead to the suspicion of the disease. This, combined with the bimanual examination and a test excision of a portion of the tumor, would undoubtedly establish the true character of the lesion. We should not, however, depend on the microscope alone, for simply finding syncytial masses in curetted material after a mole labor, abortion or normal labor, does not necessarily indicate the presence of chorioepithelioma. Particular attention should be paid to the clinical symptoms and physical signs. In the early stages of the condition, the uterus is found to be somewhat enlarged. This may vary, according to the age of the tumor, from merely normal size to the tumor reaching almost to the umbilicus. The uterine wall is somewhat softer than normal and softer in consistence than if due to the presence of a fibroid tumor. Of course, in the early stages, the consistence of the uterus would not be affected; it is only when the disease extends into and destroys the mural portion of the organ that its consistence would be altered. In nearly all the cases recorded the os uteri is found dilated, admitting, as a rule, one finger, and in some instances two fingers. The growth in some instances is found to be smooth, and nodular, while in others it may be more or less uniform and present as a simple nodule in the uterine wall, or as a soft scooped-out ulcer. As I have already stated, the tumor, as a rule, is situated in the fundal portion and posterior wall. This, from the cases I have collected, seems almost characteristic of the growth. The consistence of the growth varies; in the early stages it may be more or less moderately firm, but later, as hemorrhage and necrosis take place, it becomes friable, and in the terminal stages, when necrosis is complete, the tumor itself may have totally disappeared and nothing but a scooped-out, sloughing ulcer will be found in the uterine wall. It seems to project from or, in fact, infiltrate the wall, or, in other words, it is a portion of the uterine structure, and bleeds on the slightest provocation. It could readily be differentiated from a submucous fibroid by the history of the case, by the characteristic feel, and, finally, by microscopic examination. It would be differentiated from a carcinoma by the clinical history and by the consistence of the mass, particularly the basal portion of the mass. In carcinoma, it would be hard and indurated, while in chorioepithelioma it is a soft, sloughing ulcer.

Lastly, microscopic examination of sections of the tissue would reveal their true character. In sarcoma of the corpus uteri it would be differentiated by the clinical history, by the rapidity of growth and by microscopic examination. The metastatic deposits observed resemble to a large degree hematomata, but these on microscopic examination, as a rule, will be found to contain the characteristic elements of the growth.

PROGNOSIS.

The prognosis of chorioepithelioma is extremely grave. It is perhaps the most malignant of all tumors, occurring as it does during the full physiologic activity of the patient and with the physiologic process of pregnancy, in an organ in which at this time the blood vessels are greatly multiplied and enlarged, and, therefore, in a condition highly favorable to the transportation of these malignant cells to other portions of the body. The prognosis would seem to be somewhat modified by the character of the growth, for, as I have pointed out, in certain forms of chorioepitheliomata the tendency toward malignancy is not as marked as in others, those we find containing chorionic villi being less malignant than those without these elements. In 124 cases recorded by Ladinski there were 51 recoveries and 73 deaths, giving a mortality of 59 per cent. In 66 patients operated on radically, 57 by vaginal hysterectomy, 6 by abdominal hysterectomy, 3 by laparotomy, 50 of these recovered. Dorland's[39] 52 cases recorded in 1897 gave a mortality of 73 per cent. In Teacher's 188 cases, 99 patients were treated by radical operation. In 87 there was either no operation or it was not radical. Out of the last number 83 died. The fate of 2 was not known. In 2, spontaneous healing occurred. Of 36 deaths, 11 occurred within a few days, and 25 after longer intervals. Of the patients operated on, 16 showed no improvement, 9 made a good recovery, in 5 several months of good health were enjoyed before recurrence. In 5 patients only did the disease recur after more than 6-months intervals. Of the 63 recoveries, 32 patients were well 6 months after the operation, 24 of these after 1 year, 13 after 2 years. Of the patients who had shown signs of disease in the lungs, 8 operated on recovered; in 2 others there were growths in the vagina and 1 in the ovary. In 3 of the cases operated on incomplete operation was done, but the patients recovered. Death usually results from metastases, hemorrhage, exhaustion and sepsis. In 210 cases of hydatidiform mole collected by Findley[40] there were 49 deaths, a mortality of 25 per cent. Of this number, 32 patients died from chorioepithelioma.

Metastasis, however, must not be considered a contraindication to operation unless the patient's condition is in extremis, for several cases are recorded in which recovery occurred where metastatic deposits had been quite marked. The disappearance of metastasis after radical operation is explained by the fact that the malignant cells can only live in live blood and not in extravasated blood; wherever metastatic deposits occur, hernial extravasation occurs and they are, as it were, responsible for their own destruction.

TREATMENT.

The treatment of chorioepithelioma should be the same as for malignant disease elsewhere in the body—complete extirpation of the uterus in the field of healthy tissue at the earliest possible moment should be the only operative resource considered. If we knew more, however, of the early development of chorioepithelioma, preventive means possibly could be instituted. In cases of hydatid mole, however, precautionary measures can be successfully adopted. Bonnaire insists that

39. Dorland: Univ. Med. Mag., No. 8, vol. ix, 1897.
40. Findley: Amer. Jour. Med. Sci., No. 3, vol. cxxv, 1903.

every woman who has had a hydatidiform mole should be regarded as menaced with malignant disease. After a molar labor, the uterus should be thoroughly cleaned and packed to induce the uterine muscle to contract and thus to regain its consistence and thickness. Bonnaire[41] recommends that the cavity of the uterus be swabbed with creosote or with zinc chlorid and that the uterus should, at the interval of 10 or 15 days, be curetted and the curetted material subjected to microscopic study. Findley recommends the same procedure. If, after these operations, atypical metrorrhagia persists, inoculation of the uterus with malignant elements should be considered probable, and the organ should be removed, even if unable to detect any intrauterine nodule or ulceration, by digital palpation or by microscopic examination of the scrapings. In every case of this condition the uterine cavity should be thoroughly cleaned of all elements of this tissue. This should be subjected to careful microscopic examination and should any atypical proliferation of the cells of the villi or suspicious curetted material be seen, early hysterectomy should be performed. I am indebted to Dr. E. E. Montgomery for the privilege of reporting this case.

PROPRIETARY THERAPEUTICS.*

HORATIO C. WOOD, JR.
PHILADELPHIA.

Perhaps I should apologize for attempting to say anything new on such a well-worn subject as the expediency of using proprietary drugs. Let my apology be the conviction that the increasing prevalence of the use of these remedies is exceedingly detrimental to the best interests of the medical art.

I wish to consider that class of agents, commonly called nostrums, which are mixtures of several more or less well-known ingredients the use of which threatens to relegate prescription writing to a place among the lost arts. In no way do I refer to definite chemical compounds which may be the property of some manufacturing druggist. While I am by no means certain that the introduction into medicine of these products of chemical ingenuity has been an unmixed blessing, any opposition to them is founded on grounds essentially different from those which form the basis of my protests against the pharmaceutical nostrum, whether parading in its true guise or attempting to hide its real character behind that magic shibboleth, "synthetic."

The great fundamental objection to the use of proprietary mixtures is an objection to all set and unalterable formulæ. Disease offers an ever-shifting picture, never presenting precisely the same problems in any two instances, varying from day to day and perhaps from hour to hour in its morbid manifestations, and unless the treatment be capable of easy modification to suit the changing conditions we can not hope to accomplish the best results in our warfare against it.

These set formulæ are presumably constructed on the same plan as ready-made clothing which is made from a large number of measurements to fit the average man. As a matter of fact, however, the average man is non-existent and the ready-made suit can never fit exactly. Clothing, however, is one of the minor cares of life, and the majority of us, having something more important to think about, are satisfied if it fits approximately well, but when we are dealing in human health, and it may be at times in human life, can we justify our satisfaction with an approximately fitting remedy?

Another objection to these substances is their secret or semi-secret nature. Of those abominations which simply advertise a descriptive title and the assertion that what not "is a specific in all forms of" this or that (you know the type), it seems almost unnecessary to speak. We preach to the laity of the evils of self-medication; but I confess that it does not seem very clear to me why the childlike faith of a sick man in the veracity of a nostrum advertisement in the daily press is any less rational than the childlike faith of the physician in the same sort of an advertisement in a medical journal. Indeed, the employment of these fancy-named specifics is a direct temptation to self-medication. In the show windows of one of those so-called drug stores whose chief business is the sale of soda water and silverware with patent medicines as a side line, recently was exhibited a remedy widely advertised to physicians, flanked on one side by Kilmer's swamp root and on the other by peruna catarrh cure.

A much more elusive and therefore more dangerous evil lurks in that class of mixtures which attempts to cloak their secrecy with a deceptive show of frankness. I think you will grant that the physician is rarely justified in the use of remedies concerning which he has no knowledge, and I maintain that the publication by a drug firm of whose integrity the physician is absolutely ignorant, of a professed list of ingredients of some mixture is not sufficient knowledge to pardon or to warrant the use of that remedy. In the first place, if the published formula be correct it is not enough to know simply the composition of a mixture, the exact quantities must also be known; there is a vast difference between the effects of one grain and of one hundred grains of opium. Moreover, there is no means of knowing that the formula is a true one, for many of these corporations do not hesitate to pervert the truth. For example, of a widely known anti-rheumatic mixture it was formerly proclaimed in flaming headlines that it contained no salicylic acid, but to-day the manufacturer sells it as a palatable preparation of the salicylate of sodium; another advertised as passiflora tablets has recently been shown to contain a notable amount of acetanilid.

The common defense of the secret nostrums is based on its value as property. As a typical example, I quote from a recent editorial in an evidently subsidized medical journal; the writer says: "The manufacturer who perhaps has spent hundreds and thousands of dollars in perfecting the formula, can not be expected to give gratuitously the product of his time, thought and money." I ask: How have these hundreds and thousands of dollars been spent? Can a pharmacist hire men to be sick that he may experiment on them with varying combinations of drugs? Does he dare insinuate that the medical profession is ready to barter in human suffering for the enrichment of the nostrum vendor? No, the hundreds and thousands of dollars have been spent in suborning medical journals to laud some hit or miss formula thrown out of a drug factory in the form of a pill, sugar coated with deceit and falsehood.

The defenders of these conglomerations hint vaguely at a wonderful augmentation of beneficial powers, the result of some mysterious manipulation, of some super-

41. Bonnaire: Rev. de Gynecol., Paris, vols. iv and v, 1901.

* Read before the Columbus Academy of Medicine, 1905.

nal pharmaceutical skill which has overturned and transformed the properties of a well-known drug. Are we, as reasonable human beings, expected to believe such twaddle, carrying us back to the dark ages when the black art and fetichism were blood brothers of medicine?

What remarkable pharmaceutical ability does it require to triturate together acetanilid and sodium bicarbonate, and press them into a tablet stamped with a symbolic initial? Can anyone tell me how the addition of potassium bromid and the extract of hyoscyamus makes chloral hydrate "the safest hypnotic known"?

That manufacturers often realize the absurdity of such claims is shown by the number of those who manifest a desire to pose as "ethical" by the publishing of a pretended formula, and yet attempt to obscure the real nature of their mixtures by the use of uncommon names for well-known drugs or by including some plant of which the ordinary physician has probably never heard. The inference, of course, in the latter case is that this rare ingredient is possessed of wonderful healing properties that render the peculiar combination beyond the possibility of imitation. Does it seem probable that if this mysterious plant did possess any such virtues as are ascribed to it, it should have flourished for these thousands of years and escaped the notice of generations of practical physicians, of studious scientists and of far-wandering botanists? We may rest assured that any substance having such remarkable powers would have been known to some member of the medical or pharmaceutical professions, and would have found entrance into that magnificent collection of real medicaments, the United States Pharmacopeia.

Here is an advertisement of a mixture intended for an emmenagogue, which it is stated "contains champaca, abromafastuosa, ferrum, ruta, and apiol." To the uninitiated this seems a truly wonderful aggregation of unknown and therefore potent remedies. But let us investigate. Champaca or champac is an oriental tree of the magnolia family, whose greatest claim for immortality rests on the fact that the poet Shelley has introduced it into his famous song "The Indian Serenade." It has been shown, however, to contain a substance closely allied to camphor. The second ingredient, which is printed as one word apparently for the purpose of deception, is evidently the botanical name of a plant. Now the genus *Abroma* was recommended in the treatment of dysmenorrhea as far back as 1873, but it apparently did not possess sufficient activity to deserve a place in practical therapeutics until some enterprising pharmacist thought of using it to disguise a not very remarkable abortifacient emmenagogue mixture. Of the other ingredients, with which all physicians are probably acquainted, all that remains to be said is that rue is well known to possess emmenagogue properties but it is rarely employed to-day except for the production of criminal abortion. The physician who can not compose a better emmenagogue mixture had better quit the practice of medicine.

Let me call attention to one other example of this effort to confuse the unwary, the simplicity of which is really laughable. A very extensively advertised drug, hailing like other orthodox fakes from St. Louis, is said to be "a palatable preparation of *Panax schinseng*. Panax is the botanical name for the popular Chinese remedy ginseng, whose therapeutic value is about equivalent to that of licorice root. If you want licorice, order extractum glycyrrhizæ.

No condition exists without cause and there must be some strong reason for so general a use of these preparations. It is incredible that mere convenience in prescribing can explain such a widespread popularity without some other influence at work.

One great reason for the flourishing condition of this business is to be laid directly at the door of the profession, that is the ignorance of the action of drugs and of methods of combining them. The subject of therapeutics is all too imperfectly taught in our medical schools, while that of prescription writing is almost completely ignored. If anyone will look over the examinations of various state boards he will find lower marks in prescription writing than in any other subject.

The recent graduate is called on by his first patient, and he has auscultated and percussed the sick man from the tip of the ear to the end of the toe, he has counted the number of corpuscles in the blood, he has taken a sphygmographic tracing of the pulse, he has made a microscopic examination of the sputum and a bacterial culture from the throat, he has tested the urine for acetone and the diazo-reaction, he has determined the percentage of hydrochloric acid in the stomach—all these things have been taught him at his medical school, but no one has thought it necessary to teach him that refinements of diagnosis are but a means to the end of a more successful therapeutics. Perhaps his professor of medicine belonged to the sect of nihilists and taught "leave the patient to nature, and you will get an interesting autopsy!" The young physician realizes that his patient does not want an interesting autopsy and that he must at least make a pretence of doing something, and while his eyes are roving round in thought as to what he can order, they fall on a green and purple announcement received in that morning's mail that "Jones' Creotin" gives wonderful results. Feeling his incompetency and yet fearful of displaying his ignorance is it any marvel that he falls an easy victim to the blandishment of the blotter?

But the most potent factor, I believe, has been extremely lavish and often very shrewd advertising. I read recently an illuminating account of the establishment of a well-known nostrum. The story goes that there was an advertising agent some years ago who was being twitted by a friend as to the uselessness of his calling. The specialist in publicity replied, "Why you can sell anything with proper advertising" and proceeded to mix together some harmless ingredients, gave his concoction a high sounding name, heralded the mixture broadcast throughout the land as a balm for all human woes and to-day is retiring from business a millionaire. We need not flatter ourselves that the medical profession is any less easily duped than is the rest of mankind; after all, the physician is human and there is much truth in the oft-quoted saying of the circus manager that "people like to be humbugged."

A well-known physician in an investigation of this subject two or three years ago calculated that $600,000 was expended annually in advertising secret nostrums. I am inclined to believe that his figures are far short of the mark. The interesting question suggested by these figures is, where does the money come from? Those hundreds of thousands of dollars are coming out of your pockets and your patients' lives, and yet the medical profession is blind enough to continue uncomplainingly feeding these jackals that fatten themselves on human suffering.

Of course the owners of secret remedies as of any

other commodity have a perfect right to advertise their wares in any magazine which will publish them, and by common consent it is understood that advertisers are not bound by any ties of truth nor even of probability, but a very grave danger threatens in this connection. The advertisers are not satisfied with exploiting their products in the back of the magazine, they clamor for reading notices and demand a censorship of the whole journal in their interests. In this respect, we may recall the old story of the camel who on a cold night poked his nose into the tent of the Arab and besought that he might only warm his nose. Little by little he intruded his body until finally he possessed himself of the tent and the poor Arab slept out in the cold.

Using the value of their advertising patronage as a club to force complaisance, slowly but persistently the nostrum vendors are possessing themselves of the medical literature until soon our medical journals will be entirely given up to eulogizing proprietary remedies. I believe I am speaking very conservatively when I say that the reading columns of two-thirds of the medical journals of this country are controlled by the proprietors of various drugs.

Only a week or two ago, the editor and owner of a so-called medical magazine told me that he had sold outright four pages of his reading columns to a certain manufacturing house, that is, he had contracted to allow them to print among the reading matter of his magazine four pages of anything that they pleased. It is not alone the smaller publications of purely local fame which have become entangled in this business, magazines of large circulation and high standing are in the snare of the fowler.

Allow me to relate a personal incident. A short time ago I took an article which contained some unmodified truths concerning certain proprietary disinfectants to the editor of one of the oldest and most widely known medical journals published in Philadelphia. Noting the references to the disinfectants, he informed me that it was his unalterable rule never to mention proprietary drugs in the pages of his journal. Thinking that he meant that secret remedies were things that could not be discussed in so substantial a member of medical journalism, I assured him that I had certainly not sung the praises of these remedies and called his attention to one or two paragraphs in the article which he read over and then reached for the last number of his journal and said with a deprecatory smile, "Here is a whole page advertisement of —— ———, were your article to appear they would withdraw their advertisement immediately; here is half a page of —— advertisement. Doctor, I could not think of publishing your article unless you withdraw all mention of these substances."

If it has come to the point that reputable medical journals are afraid to publish the truth concerning proprietary remedies, it is time to call a halt.

But, after all, this condition of affairs is not to be greatly wondered at. A body of men whose motives are purely mercenary are very likely to develop highly specialized consciences which do not respond to any of the ordinary moral stimuli. We need not be surprised, therefore, if whatever power they possess is used unscrupulously for the advancement of their own interests and for the destruction of any opposition to the growth of this power. The most serious obstacle to the success of such aims is the force of public opinion, for I believe that wherever well informed of the real conditions, the sentiments of the people as a whole will ever be in favor of right and morality.

These men being not only venal but shrewd as well, recognize the necessity of poisoning our sources of information, and exert every effort to the debauchery of the medical press. They were even attempting to exploit THE JOURNAL of the American Medical Association, but this slow-moving body has finally roused from its lethargy and the result has been the most hopeful suggestion that has yet been made for the relief of the profession—I refer to the proposed pharmacopeia of unofficial remedies. Both the character of the committee in charge of this work and the preliminary report already published give ground for hope that much good will be accomplished.

But so thoroughly has the work of corruption been done that even erstwhile respectable medical journals have joined the ranks of the sophists who monotonously chant the same refrain: the right of the drug manufacturer to his property. What interest have you or I as physicians in the commercial value of that property? The moral strabismus of the medical press is comprehensible, for into their coffers flows from these ill-gotten gains a constant dribble in the form of advertising patronage, but the obtuseness of the physician who continues to rob himself to enrich the nostrum-monger is of the same class as that which exposes the country bumpkin to the allurements of the shell-game.

FEDERAL CONTROL OF VACCINE VIRUS.*

JOHN F. ANDERSON, M.D.
Passed Assistant Surgeon and Assistant Director, Hygienic Laboratory, U. S. Public Health and Marine-Hospital Service.
WASHINGTON, D. C.

"An act to regulate the sale of viruses, serums, toxins and analogous products in the District of Columbia, to regulate interstate traffic in said articles, and for other purposes," and the regulations framed thereunder have now been in effect about 18 months, and I thought it might be profitable as well as interesting to call attention to the great improvements which I believe may fairly be traced to the operations of said act.

Prior to the passage of this law there had been no legal control of vaccine virus in this country; and it would seem remarkable that so important a product as vaccine virus, affecting so intimately the protection of the community against such a loathsome disease as smallpox, should have no public supervision over its manufacture. Any one could make a product, label it vaccine virus and place it on the market regardless of the impurities contained therein or its lack of potency, being governed in this respect only as it affected the business of the firm making it.

Any one interested may obtain a copy of the act by applying to the Surgeon-General of the Public Health and Marine-Hospital Service.

In accordance with the law and the regulations, the Surgeon-General of the Public Health and Marine-Hospital Service caused an inspection to be made of all establishments manufacturing vaccine virus in the United States. This inspection was made by officers of the Public Health and Marine-Hospital Service. As a result of the inspection four firms were found manufacturing vaccine virus according to obsolete methods and, being unable to comply with modern requirements of

* Read at the thirty-second annual meeting of the American Public Health Association, Havana, Cuba.

asepsis and laboratory control, preferred to retire from business.

On account of certain insanitary conditions and faulty methods of laboratory control of some of the firms, the inspectors found it necessary to recommend that their establishments and methods of manufacture be considerably improved before the issuance of a license could be recommended, the license being withheld until these faults were corrected.

At present there are eight producers of vaccine in the United States licensed to engage in the manufacture and interstate sale of this article. They are

Parke, Davis & Co., Detroit, Mich.
H. K. Mulford Co., Glenolden, Pa.
H. M. Alexander Co., Marietta, Pa.
Fluid Vaccine Institute, Milwaukee, Wis.
Pocono Laboratories, Swiftwater, Pa.
National Vaccine Establishment, Washington, D. C.
Frederick Stearns & Co., Detroit, Mich.
The Cuttler Analytic Laboratory, San Francisco, Cal.

A description of the manner in which the inspections are made will show the thoroughness with which this part of the law is carried out. The officer detailed for this purpose calls on the head of the establishment without notice, stating the object of his visit. Then, in company with the expert having supervision of vaccine production, a rigid inspection is made of all portions of the establishment, including the stables, barns, warehouses, records and animals, especial attention being given to sanitary conditions, the water supply, the screening of stables to protect animals against insects, disposal of refuse, character of food supplies, and proximity to stables used for housing horses (danger of tetanus contamination).

Close attention is given to laboratory methods, especially those of disinfection and bacteriologic control, in order to insure freedom from outside contamination. The inspector also observes the method of glycerinating the pulp, the process of grinding and mixing the virus, the distribution into tubes and the preparation of points. The inspector then observes the vaccination of a calf and the collection of virus from a "ripe" vaccination. All this is done in order to insure the inspector that the technic of the manufacture is safe and effective. The inspector purchases on the open market vaccine made by the concern and it is forwarded to the Hygienic Laboratory of the service, situated in Washington, where it is examined for purity and potency.

In accordance with the law, monthly purchases of vaccine virus are made on the open market and the product is examined in the Hygienic Laboratory. This examination is two-fold, for purity and for potency. The person buying the vaccine virus forwards it to the laboratory with a memorandum giving the retailer's name, date of purchase, conditions under which it was kept in the drug store, and any other facts that he may think pertinent.

When received in the laboratory the package is first examined to see whether the regulations have been complied with in that the name and address of the manufacturer, his license number and the date of manufacture and of return are plainly stated on the label.

For the laboratory examination it is necessary to have at least 20 tubes or points to determine the average number of bacteria per point or tube, the presence of pathogenic organisms and the potency of the virus. Ten vaccines—by this I mean either a point or a capillary tube—are planted and counts are made therefrom. The point is immersed in about 1 c.c. of physiologic salt solution for fifteen minutes to soften the vaccine matter. It is then scraped off with a sterile platinum spatula and is thoroughly agitated to break up the clumps. If a tube, the contents are washed into 1 c.c. of salt solution.

Five drops of the emulsion are placed in the first plate, ten drops in the second and the remainder in the third, and then these are flooded with agar. The plates are incubated for three days at 37 degrees C., and then at room temperature for two days, after which a count of colonies is made.

After the counts are made the different plates are carefully gone over, especial attention being paid to cocci, molds, streptothrices, and any unusual appearing colonies. Practice has enabled those making the examinations to detect immediately the presence of unusual colonies. Of course the number of bacteria is not nearly of so great importance as the kind. One tetanus spore or a few virulent pus cocci would be far more serious than countless numbers of subtilis spores.

The entire contents of eight tubes or eight points are planted in 100 c.c. of freshly prepared and recently boiled glucose-bouillon and grown at 37 degrees C. At the end of forty-eight hours 1 c.c. per 1,000 grams of rabbit of the top growth is inoculated into the peritoneal cavity. If the rabbit sickens or dies an effort is made to determine the cause. At the end of seven days the remainder of the bouillon growth is filtered through porcelain and 0.2 c.c. of the filtrate is inoculated subcutaneously into a mouse to determine the presence of tetanus toxin. This method we believe to be a simple and sure one for the determination of tetanus contamination.

Cultures of cocci and certain other organisms are made from the plates and their pathogenicity ascertained by animal inoculation. Within the past year streptococci have been found on but rare occasions. Seldom has a virulent staphylococcus been found. Streptothrices have been found in the product of almost every manufacturer, though not virulent for laboratory animals. No evidence of tetanus has been found in any vaccine examined in the Hygienic Laboratory.

The product is finally tested for potency by primary vaccinations on children, using two tubes or two points taken from packages the remainder of which has been examined bacteriologically. The case is kept under daily observation and special attention is given to the character of the "takes." If any faults are discovered, especially bacteriologic contamination of a serious nature or a lack of potency, the facts are reported to the surgeon-general, who calls the attention of the manufacturer to them.

Vaccine has been examined in the laboratory almost continuously since early in the winter of 1901-2 and the following figures will convey an idea of the degree of contamination before the attention of manufacturers was directed to the large amount of contamination and since the passage of the act approved July 1, 1902. Vaccine virus examined during the winter of 1901-2 gave a general average of 4,698 bacteria per tube and 4,809 per point, the highest count for a tube being 30,080 and for a point 20,828. In the examinations conducted since the act went into effect the general average of the tubes has been 309, for points 1,223; the highest for a tube being 1,501, and for a point 8,860.

The following table shows the highest, lowest and the average number of colonies found in tubes and points in 1901-2 and in 1904. It will be seen that with only one exception the counts for 1904 were considerably

lower than for 1901-2, this one exception being in a manufacturer whose product has always averaged particularly low in contaminating organisms and has given a high percentage of "takes."

TABLE COMPARING THE BACTERIAL CONTAMINATIONS OF VACCINE VIRUS BEFORE AND AFTER THE PASSAGE OF THE ACT.

Manufacturer.	Date.	Tubes.			Points.		
		High.	Low.	Average.	High.	Low.	Average.
A.—Before Act....	1901-02	17,000	86	2,498	15,760	13	2,463
After " ...	1904	1,501	12	462	546	133	271
B.—Before " ...	1901-02	7,274	192	3,896	20,828	4,923	10,708
After " ...	1904	374	3	131	8,148	38	1,243
C.—Before " ...	1901-02	2,440	111	1,166	13,030	847	4,358
After " ...	1904	535	86	213	2,690	642	1,459
D.—Before " ...	1901-02	4	0	1			
After " ...	1904	336	94	209			
E.—Before " ...	1901-02	30,080	11,840	18,443			
After " ...	1904	1,125	53	409	8,860	520	3,132
F.—Before " ...	1901-02	8,000	116	2,455			
After " ...	1904	484	49	229	270	21	90
G.—Before " ...	1901-02	18,404	1,414	6,819	12,800	1,530	6,098
After " ...	1904	1,242	8	373	380	42	149
H.—Before " ...	1901-02	3,819	369	1,875			
After " ...	1904	1,095	343	595			
General average							
Before Act...	1901—02	.....	.....	4,698	.....	.....	4,809
After " ...	1904	.....	.....	309	.....	.....	1,223

We can not but feel that this decided improvement has been due to the rigid inspection and control of the manufacture of vaccine virus by the federal government.

The first one to call attention to the contaminations of vaccine virus was M. J. Rosenau in his article read before the New York Academy of Medicine on February 20, 1902, and in his article entitled "Bacteriological Impurities of Vaccine Virus," published as Bulletin 12 of the Hygienic Laboratory, which showed that manufacturers were placing too much confidence in the germicidal properties of glycerin. But the results shown in Bulletin 16 of the Hygienic Laboratory[1] demonstrate that the germicidal action of glycerin is very feeble, and that pus cocci were able to live in the ice chest indefinitely. On account of the great demand for vaccine virus at that time manufacturers were without doubt placing the virus on the market very soon after removal from the calf and before it had been freed from its bacterial contamination.

While commercially it may be impossible to place a virus on the market that is absolutely free from microbial contamination, it is not too much to ask that no vaccine be placed on the market unless it is free from pathogenic cocci and other dangerous bacteria.

There is one point in the vaccine question that has, up to the present, had but slight attention from manufacturers, and that is the distribution of their product. As is well known, perishable food products are shipped in cold storage or under special conditions, and it would seem that with a substance so susceptible to the influence of temperature as vaccine virus, it would not be unreasonable to expect that similar care be taken in its distribution.

1. The Bacteriologic Impurities of Vaccine Virus; an Experimental Study. Hygienic Laboratory, U. S. Public Health and Marine-Hospital Service, Bulletin No. 12, 1903. The Antiseptic and Germicidal Properties of Glycerin. Ibid. Bulletin 16, 1903. See also on this subject: Dry Points Versus Glycerinated Virus from a Bacteriologic Standpoint. American Medicine, April 19, 1902, p. 637. Remarks on the Preparation of Vaccine Virus. Anderson, John F., Medical Record, March 12, 1904.

Respect.—If we would have our profession respected, we must respect it ourselves, by never speaking of it lightly, slightingly or in a deprecatory manner.—Williams, in *Journal of the Michigan Medical Society.*

THE ADVANTAGES OF EXPEDITIOUS SURGICAL WORK.

ROBERT T. MORRIS, M.D.
Professor of Surgery, Post-Graduate Medical School.
NEW YORK CITY.

Previous to the days of anesthetics and of aseptic surgery, operators strove to complete their work in the shortest time possible, and the results of skill in this direction were appreciated. Under the influence of modern methods of protection for the patient, there came a tendency to devote more time to detail in operative technic, and this sometimes degenerated into "puttering." It is quite as important for the patient to retain his natural resistance after operation as it is for the surgeon to add artificial means for securing asepsis during operation. Mr. Tait was the first prominent exponent of this principle, but the special reasons for his success were not understood in his day. We now know that infections are met by the cell resistance of the individual, and the better the general resistance of the patient, the better his special cell resistance. A patient usually retains a great fund of natural resistance during the first fifteen minutes of an operation, no matter what is being done; but he is usually depressed after an hour of operative procedure, even though the work be simple in its nature. It seems well, therefore, for us to make an attempt to approach as nearly as possible to the fifteen-minute standard of time in most of our surgical work.

The matter came up for discussion recently in a little group of surgeons, and I had my next dozen operations timed. Not one of the operations was done in the shortest time in which I have done any one of them previously; other surgeons would have been still more expeditious, and two of the operations required much more than the average length of time, but, on the whole, the list furnishes a very good illustration of the advantages of "getting in quickly, and getting out quickly" in surgical work. A common criticism is that important details may be neglected. That is a matter for the audience to decide, as all of these operations, except in the prostate case, were done in the presence of the class at the Post-Graduate Medical School. It is not desirable to operate against time, but it is worth while to make every move count, and to note, after all necessary things have been done, that the work was not unduly prolonged.

The following 12 cases are consecutive ones, with the exception of two or three minor procedures not worthy of classification.

The time recorded was the time from the beginning of an incision to the closing of the last suture; or, in cases without suturing, to the application of the last dressing.

CASE 1.—Mr. R. L. C., aged 19. **Interval appendicitis; appendix entirely buried among dense adhesions.**

Operation.—**Gridiron incision one and one-half inches long, removal of appendix and suturing of separate tissue planes of the abdominal wall with catgut.**

Time.—**Sixteen and one-half minutes.**

Result.—**Primary union and patient out of bed on seventh day.**

CASE 2.—Dr. H. E. C., aged 29. Gangrenous appendix; old and new adhesions.

Operation.—**Gridiron incision one and a half inches long, removal of appendix and separate suturing of tissue planes with catgut. No drainage.**

Time.—**Twelve minutes.**

Result.—Primary union and patient out of bed on the seventh day.

CASE 3.—Mrs. H. R., aged 31. Extrauterine pregnancy; patient apparently dying. Intravenous saline solution of about 3,000 c.c. was given before operation until pulse could be counted.

Operation.—Midline abdominal incision, many pints of blood and clots removed, oviduct removed; no drainage; tissue planes separately sutured with catgut.

Time.—Twelve and one-half minutes.

Result.—Primary union and patient out of bed on the fifteenth day.

CASE 4.—Dr. J. O. T., aged 60. Hypertrophy of prostate; bladder holding 20 ounces of residual urine; patient feeble.

Operation.—Removal of both lobes of prostate through perineal incision and insertion of Ferguson's drainage apparatus.

Time.—Five minutes for removal of the prostate and four minutes for application of drain and dressings.

Result.—Patient was out of bed on ninth day, but has pus casts with bacteria and will probably lose ground, unless flushing of the renal pelves with argyrol is to be effective. This was begun thirty days after operation, through catheters left in the ureters.

Susequent History.—Patient refused to have the pelves of the kidneys flushed through ureteral catheters daily, and he was placed on urotropin (hexamethylene tetramin). Excellent response was at once made, and he gradually improved to the point of being up and about the house, but died from the effects of an overdose of morphin two months and a half from the date of operation.

CASE 5.—Mr. F. K., aged 23. Osteoma of left superior maxilla involving vomer and ethmoid bones.

Operation.—Preliminary ligation of left common carotid artery and removal of superior maxilla and other bones through the classical incision.

Time.—About five minutes for the carotid operation, and about twenty-six minutes for the excision. Duration of anesthesia was forty-five minutes, as time was lost in getting out and preparing instruments, the need for which had not been anticipated. A most difficult operation of its class.

Result.—Primary union of all sutured structures. Patient was out of bed on third day after operation and is now having obturator applied by a dentist.

Subsequent History.—The obturator, which was made and fitted by Dr. F. L. Fossume, not only holds the cheek in normal form and allows of good articulation, but it carries teeth which restore the appearance and function of the lost maxilla.

CASE 6.—Dr. A. I. B., aged 33. Interval appendicitis, with one short adhesion band.

Operation.—Gridiron incision one and a half inches long. Eucain anesthesia. Removal of appendix, and closure of separate tissue planes with catgut.

Time.—Seven minutes.

Result.—Primary union. Patient was out of bed on third day, and gave a dinner to friends down town on the fifth day, against my approval.

CASE 7.—Mrs. R. R. D., aged 35. Extensive peritoneal adhesions, involving omentum, loops of bowel, and pelvic structures. Diastasis of rectus abdominis muscles following imperfect closure after a previous operation.

Operation.—Separation of all adhesions, and application of Cargile membrane for prevention of their recurrence. Dissection of sheaths of rectus muscles, and careful suturing of separate tissue planes. Patient was very adipose.

Time.—Twenty-three minutes.

Result.—Primary union excepting at pea-sized point. Patient was kept in a recumbent posture for eighteen days to avoid undue tension on abdominal wall.

CASE 8.—Miss K. S., aged 17. Dysmenorrhea due to cirrhotic ovaries. Extensive active acne of forehead and shoulders. Preputial adhesions.

Operation.—Decapsulation of ovaries, through midline abdominal incision. Circumcision.

Time.—Thirteen and one-half minutes.

Result.—Primary union. Acne had disappeared by fifth day leaving small dry comedones. Patient was out of bed on fifteenth day.

Subsequent History.—Decapsulation of the ovaries has not relieved the dysmenorrhea, but the acne, which had been a distressing feature of the case for several years, is now apparently cured.

CASE 9.—Mrs. T. L., aged 23. Extensive pelvic peritoneal adhesions. Perineum ruptured to second degree.

Operation.—Midline abdominal incision, separation of adhesions, conservative treatment of ovaries and tubes and application of Cargile membrane to prevent recurrence of adhesions. Repair of perineum by semilunar incision and suture of bulbo-cavernosus and levator ani muscles in median raphe.

Time.—Three and one-half minutes for the perineal operation, and nine minutes for the abdominal operation.

Result.—Primary union of abdomen and perineum. Patient was out of bed on seventeenth day.

CASE 10.—Mrs. F. L. F., aged 25. Extensive peritoneal adhesions of pelvis, including loops of bowel, omentum, and uterus and adnexa.

Operation.—Midline abdominal incision, separation of adhesions and application of Cargile membrane; removal of left ragged adnexa; conservative treatment of right ragged adnexa.

Time.—Fifteen and one-fourth minutes.

Result.—Primary union. Patient was out of bed on the seventeenth day.

CASE 11.—Mrs. E. M., aged 74. Carcinoma of right breast; patient was extremely adipose.

Operation.—Removal of breast, pectoral muscles, axillary and subclavicular glands and fat, which latter were firmly adherent to axillary vessels; buttonhole side drain for wick; the rest sutured.

Time.—Twenty-six minutes.

Result.—Primary union along the whole sutured line. Patient had been nervous about operation, and had been led by nurses and assistants to think that we had simply applied "massage under an anesthetic" and did not discover that an operation had been performed until a week later when the dressings were changed. She wished to get up two or three days after the operation.

CASE 12.—Mrs. C. M., aged 18. Tuberculosis of diaphysis and epiphysis of left tibia.

Operation.—Excision of knee.

Time.—Twenty-one minutes.

Result.—Wound granulating safely, two weeks elapsed.

Subsequent History.—There is new tuberculous invasion at the site of the excision, and the leg will probably have to be amputated.

With the exception of the cases of excision of the maxilla and of the knee, the instruments employed consisted usually of a pair of scissors, a needle, a single-hook retractor, and two pairs of artery forceps.

The object in using scissors in place of the classical scalpel is because there seems to be much less oozing of blood from small vessels, and because the number of instruments is lessened. The argument that primary union may not follow the use of scissors is answered well enough by these cases without reference to further statistics.

616 Madison Avenue.

Reflex Trouble After Cataract Operation.—P. de Obarrio of Panama writes to the *Anales de Oftalmologia* for April to call attention to a possible source for the congestion sometimes noted after extraction of a cataract. In about 100 cases he has frequently observed a mild transient hyperemia after cataract extraction, which yielded promptly to the usual measures. In certain instances, however, the congestion was more severe, and proved rebellious to all treatment until a carious tooth in the upper jaw was extracted, when the condition returned at once to normal. In all such cases the teeth should be carefully examined.

TREATMENT OF PSORIASIS BY THE GENERAL PRACTITIONER.*

DR. DREUW.
Assistant at the Clinic of Dr. P. G. Unna, Hamburg.
ALTONA, GERMANY.

In a former article[1] I described a new ointment, which I have used very successfully in the treatment of psoriasis. It consists of:

℞.	Acid. salicylic 3iiss	10
	Chrysarobin	
	Ol. rusci (birch tar), āā.....3v	20
	Sapo. virid.	
	Vaselin, āā.....3viss	25

This ointment contains keratolytic reducing as well as macerating and antipsoriatic remedies in rather large doses. The combination of sapo. viridis and chrysarobin represents, I believe, an original feature in this application.

During the last two years I have treated a great number of psoriasis patients with this ointment, but I do not intend publishing reports of these cases, as the process of recovery was nearly identical in all. The treatment is as follows:

For from 4 to 6 days the ointment is applied by the aid of a stiff brush to the affected area (after this has dried somewhat it is well to apply a little starch or zinc powder). On the fifth or sixth day the patient starts taking hot baths daily for from one to three days, and after the bath vaselin is to be well rubbed in from one to three times a day. This course of treatment, which embraces a period of eight days, may be repeated several times, according to the severity of the disease, but as a rule the psoriasis patches disappear soon after the first treatment.

During treatment, the appearance of the lesion is as follows: One or two days after the application has been begun, it will be observed that the ointment remains on the normal skin immediately surrounding the patches of psoriasis as a black parchment-like crust of the thickness of a piece of paper, whereas over the affected areas the ointment does not stick but rather causes a powerful scaling of the entire plaque. Wherever psoriasis exists in any shape, from the simple feeling papula to the formed scale-covered plaque, an intense feeling takes place. It is my opinion that the ointment, according to the different effects on normal and diseased skin, as described above, acts as an indicator for all areas of psoriasis.

The black crusts which become closely adherent after five or six days' treatment gradually loosen after a few days of bathing, and inunction with vaselin or with zinc sulphur ointment.

The difference between this ointment and other chrysarobin ointments is that it possesses the property of limiting the chrysarobin irritation almost completely to the diseased area with hardly any damage to the neighboring skin.

Every physician is acquainted with the diffuse staining caused by chrysarobin, which often gives the patient the appearance of an Indian, but my ointment remains, with but few exceptions, limited to the area of application.

In my first publication I mentioned the satisfactory results that I attained by this method of treatment. Since then, Professor Lassar[2] has expressed the same opinion. He says:

> I have given the combination of salicylic acid with chrysarobin, tar, soap and vaselin, suggested by Dreuw in the *Monatsschriften fuer praktische Dermatologie*, a thorough trial since March on 300 patients, and am pleased to state that the results were entirely satisfactory. The irritation caused by the chrysarobin, with but few exceptions, remained absent, and in the few cases the inflammation was more moderate than is usually found after treatment with chrysarobin. The ointment forms a thick black crust on the diseased area, and over these areas the ointment can be applied again and again, while the tar treatment can be carried on. Gradually the crusts peal off and, instead of a psoriasis plaque, there remains, as a rule, an area normal in appearance and difficult to distinguish from its healthy surrounding, though now and then an area for a time will assume a paler shade which soon disappears. Dreuw's method has proved itself to be so free from irritation and yet so efficacious that I have used it without exceptions on all my patients and consider it superior to all others as regards the ease with which it can be handled and the promptness with which it cures; and also because it is well adapted for an after-treatment which can be carried on by the patients themselves without any danger. Having had good results in the treatment of psoriasis by means of soap ointments, peeling cures and tar preparations, I was at once inclined to place considerable faith in this combination of useful remedies, and the addition of salicylic acid seems to add materially to the general activity of the ointment. This combination can also be used instead of Wilkinson's ointment in the treatment of prurigo, pruriginous infiltrations and old chronic lichen rubra. It is almost odorless, has the consistency of ordinary ointment, yet the essential advantage lies in its power of impregnating and peeling the diseased area simultaneously. Taking it all in all, this method is a very desirable acquisition to our therapeutics and will be found deserving of the gratitude of all practitioners using it.

In recognition of the good results in the clinic of Professor Lassar and my own private practice, I feel justified in recommending this method to every general practitioner on account of its simplicity and of the ease with which it can be carried out in general practice. The patient should wear old underwear and outer clothing, and should make only the most necessary changes during the entire treatment.

I take pleasure in complying with Dr. Unna's request to state that the results gained by my method of treatment at his clinic as well as at his polyclinic correspond entirely with those at the clinic of Professor Lassar.

In order to obtain the best effects the solid constituents of the ointment must be thoroughly rubbed, so as to produce a uniformly fine ointment. For prolonged use, I prepared a material called mull with this ointment and found its application so free from all irritating qualities that I was enabled to place it on the forehead immediately above the eye in adults as well as in children and to leave it *in situ* for from three to four days without producing any deleterious results. The use of this ointment and mull is not limited to psoriasis, but can be extended to other conditions in which a special macerating process is desired with the smallest possible amount of irritation. I have used it thus in trichophytosis and in local circumscribed dry eczema, and it can be kept on for from six to eight days, after which any mild ointment may be applied.

* From Dr. Unna's dermatologic clinic, Hamburg.

1. Monats. f. praktische Dermat., vol. xxxiv, 1903, p. 508. See also THE JOURNAL, xliii, p. 232.

2. Zeitsf. Dermat., vol. x, part 51, p. 560.

Alcohol from Peat.—*Meyer Brothers' Druggist* states that alcohol is being made from peat in Russia, and that it is hoped to make the product sufficiently cheap for use as fuel.

WHAT IS DYSPEPSIA?*

FENTON B. TURCK, M.D.
CHICAGO.

Dyspepsia is difficult digestion and may include all forms of disturbances associated with the digestive process. Normally we are not aware that digestion is going on. When sensations are experienced we have dyspepsia.

The ancients sought knowledge through the avenues of philosophic reasoning—the dream of ideas—but in modern methods we gain knowledge by experience of phenomena. What is dyspepsia? We all know, at least empirically, what it is. We were early taught by childish experience with unripe fruit. It has been facetiously stated that the apple which Eve gave to Adam was green, and that it caused indigestion. If we would gain a scientific knowledge of dyspepsia we must study the process of normal conditions and trace the pathologic changes that occur.

From time immemorial dyspepsia has been a national as well as an individual problem. Nations do not begin to decline until they have reached the stage of luxury; then their appetite becomes abnormally developed by overindulgence. The inhibitory power is weakened by degrees, and every nation that climbs into the lap of luxury crumbles through the indigestion of the individual. It was at a great feast that Belshazzar read the handwriting on the wall that foretold the fall of Babylon. The Greeks forsook the simplicity of the heroic Spartan life to indulge in the splendor of Grecian prosperity. Not even the philosophy of Socrates, of Plato or of Aristotle could curb the evils of luxury. As their minds leaped wildly into "absolute infinitude" for the solution of the problems of life, despairingly they fell back into the death grip of dyspeptic gluttony. Rome did not begin to die until her feasts were spread.

In our own land the Puritans were obliged in the beginning to live on simple fare, but, with the advent of prosperity, luxurious tastes developed. New England is responsible for the mince pie, the pork and beans, the doughnuts and the hot biscuits washed down with ice-water, which have become a national dietary. These New England dishes compose the chief menu of the quick lunch counter, which simulate pig-troughs to which busy men run, bolt down a hasty lunch of gastric irritants and return at once to business. This overworks the stomach and results in gastric fatigue, which is serious in its ravages on general health. Man does not succumb so often from overwork of the brain as from overwork of the stomach. Even a gathering of medical men, where the apostles of Hygieia assemble to obtain food for the mind, often resolves itself into a dyspeptic-producing feast. The chef and housewife are ignorant of the laws of dietetics, especially that pertaining to the composition and preparation of food. The agricultural department teaches farmers how to feed their hogs and cattle. Should we not prescribe rational diet for our patients?

Recently we have had a visit from the French apostle of "Simple Life," Wagner, who came to interpret the handwriting on the wall that predicts disaster to a badly overfed nation. Overindulgence of the appetite is not confined to the wealthy; the poor peasant of Europe, as soon as he reaches our opulent shores, falls into the evils of indigestion. Finding here lucrative employment and comparative luxury, he becomes the victim of dyspepsia. Whatever may be said of the vices that are dependent on luxury, it is certain that none of them have more immediate, far-reaching or more fatal effects on individual and national power than overindulgence of the appetite. With better knowledge of the physiology of digestion, of the laws of dietetics and of the pathologic changes resulting from departure from these laws, we may correct the evils and prevent the destruction of individual and national health.

PHYSIOLOGY OF DIGESTION.

For the consideration of the physiology of digestion the stomach is divided into two portions—chemical and mechanical. The chemical division is located in the cardiac portion and the mechanical in the pyloric end of the stomach. (Antrum of the pylorus.)

The cardiac area contains the secretory apparatus, and the peptic glands are chiefly found here. HCl is secreted not in the pyloric, but in the middle portion of the stomach.

The pyloric end, while containing some peptic glands, is chiefly concerned in the mechanical work of the contracting muscle. The energy of each contraction wave is directed on the contents, assisted by the resistance of the walls of the stomach and by the constricted pyloric orifice.

The greater part of the stomach contents remains in the cardiac or chemical portion for some time (from one to two hours) in a more or less quiescent state.

The carbohydrates (starch) are acted on by the ptyalin from the saliva, while the proteids, such as meat, are digested by HCl and pepsin secreted by the gastric glands (proteolysis). As HCl is constantly poured out, it checks the action of the ptyalin on the starch. The food mass resting quietly in the cardiac end is attacked first on the surface by the HCl and gastric ferments, which gradually penetrate until the food is more or less saturated. As the mass becomes softened, it reaches the pyloric end of the stomach through the pressure exerted by the tonus of the muscle of the cardiac end, aided by feeble and slow contraction waves occasionally seen in this portion of the stomach. On reaching the pyloric section (antrum of the pylorus) the contents are met by the powerful contractions of the muscle walls which break up the mass, forcing the liquid portion toward the pyloric orifice, the more solid part remaining in the body of the stomach. The pyloric valve relaxes and the rapid waves (one every 15 to 30 seconds) eject the softened semifluid contents out through the open pylorus into the duodenum, and spurts at regular intervals force the contents in jets into the duodenum. This is observed in dogs with the open abdomen. By resecting the duodenum close to the pyloric orifice, the stomach contents spurt a distance of from 8 to 12 cm. against the sides of the trough.

Secretion and motility are two essential factors of digestion and they depend for their action on different forms of stimuli. The sensitiveness of the secretory apparatus responds to odor and the taste of food and is so delicately arranged that the olfactory nerves and nerves of taste carry impulses to the glandular structures that call for the specific secretion adapted for the digestion of the particular kind of food that is to enter the stomach. Thus, at the smell or taste of food the mouth waters, and ptyalin is mixed with the starch and the pancreatic glands are excited into action. Even

* Read at the annual meeting of the Tennessee State Medical Association, at Nashville, 1905.

juice of meat before it reaches the gastric cavity calls forth the HCl and pepsin in the stomach, preparing the conditions for the digestion of proteids.

The motility is no less delicate in its responses to the slightest pressure exerted by the presence of substances carried to the stomach. Even a small quantity of water taken into the stomach exerts mechanically a stimulus to contraction of the muscular mechanism and discharges it within a few minutes (if no food is taken) into the duodenum. If food is taken with water it is delayed by closure of the pyloric orifice until digestion of the food occurs. Bran, which is not soluble and is chemically inert, will be expelled from the stomach the same as if possessed of food value. Air introduced into the stomach sufficient to partially distend the organ will likewise excite peristalsis by the stimulation of pressure exerted on the gastric walls. This is sometimes useful in differential diagnosis between dilatation of stomach due to obstruction at the pyloric orifice and simple atony of the muscular wall. If overdistention of the stomach is produced, the air can not pass out through the pylorus, as the powerful stimulation of the pressure causes a strong contraction of the pylorus, while the efforts of the stomach with strong peristaltic waves causes colicky pains, which are relieved when the pressure overcomes the less powerful muscles of the cardiac orifice, and the air is belched up. The residual air in the stomach may ultimately escape into the duodenum when the pylorus again becomes relaxed. The manner in which the pyloric and cardiac orifices act during such distention can be used to advantage in the diagnosis of patulous cardia or pylorus. The fine adjustment of secretion and motility to each kind of stimulation necessary for conditions of digestion is well illustrated in the specific chemical excitation of the secretion of HCl and pepsin when meat is eaten, while motility depends more on purely physical stimulation, viz., tension.

Gastric movements are not dependent on chemical stimulation as is secretion, for, if they were, bran, water, air and gases would be retained in the stomach.

To determine the results of the chemical action of food on gastric movements and those produced by different forms of mechanical stimulation, I carried out a series of experiments on dogs, as well as on the human subject. As shown by the protocols,[1] strong HCl, peptones, albumoses, starch, etc., showed no appreciable effect on the movements produced by these substances applied to the mucous membrane, while distention with air or water immediately excited increased peristalsis. If the air or water was under control, by forcing it into a bag within the stomach, so that all the air or water would return promptly, the resultant contractions were more numerous and vigorous. It would appear that tension is one of the most important factors in peristalsis of the stomach.

Cannon's[2] recent experiments have confirmed these observations. Cannon finds that movements of the stomach are independent of the chemical composition of the food introduced. Psychical influence has a marked effect; it was found that when the animal was made irritable during the experiments the peristaltic waves diminished or stopped altogether. A point of considerable practical value is gained in these experiments on gastric movements and confirms what we have learned clinically, that in atony of the stomach mechanical and physical factors are of chief importance in considering the pathology, diagnosis and treatment of the condition.

The complex activities of digestion, secretion and motility, depend on the integrity of the circulation. Betz,[3] V. Braam Houckgeest[4] and Mall[5] have shown that splanchnic anemia produced by clamping the aorta causes cessation of gastrointestinal movements. As examples of anemia of the abdominal vessels, we have the results of exercise just before or just after a meal, which increases the peripheral circulation and interferes materially with the physiologic hyperemia of the splanchnic area necessary to gastric digestion. Placing the feet in hot water immediately after a meal will inhibit, or perhaps check completely, the motor and secretory function of the stomach, this being the result of the disturbed circulatory balance. Colonic lavage or injections of large quantities of hot water into the colon interferes at once with the motor activities of the stomach, causing more or less nausea, and even vomiting, if performed after a meal; this has an effect similar to placing the feet in hot water immediately after eating, inasmuch as the use of hot water, 55° C., in the colon produces contraction of the splanchnic vessels, with dilatation of the peripheral arterioles.[6] The interrelation between the splanchnic circulation (abdominal vessels) and the digestive organs is so intimate that changes in one produce alterations in the other. This seems to be shown in a series of experiments which I reported at the meeting of the American Gastroenterological Association, 1900.[7]

The changes of the splanchnic circulation in cardiac disease affect the digestive organs so that ingestion of food and water frequently produces marked disturbance. Portal obstruction due to hepatic disease causes inactivity of the gastrointestinal tract. Chronic gastrointestinal diseases often produce marked disturbance of the splanchnic circulation, and this, in turn, interferes with the motility and with the secretory function of the stomach and intestines. This "vicious circle" is seen in lesions of the intestines, in acute enteritis, in intussusception, in impaction and in appendicitis, all of which are known to result in marked splanchnic congestion, which, in turn, interferes with both the motor and secretory functions of the stomach and intestines. In shock, after an operation, the chief pathologic condition observed is splanchnic congestion. Clinical evidence has proved both the motor and secretory inactivity of the digestive function in shock. This I[8] also demonstrated experimentally on animals in shock.

In considering the causes and effects of dyspepsia we can readily see how the circulation is directly connected with every change in the digestive process. This point is exceedingly important in selecting a course of treatment.

If any one of the supports in this tripod—secretion, motility and circulation—is disturbed it immediately interferes with the whole process of digestion and dyspeptic symptoms are the result.

1. THE JOURNAL A. M. A., March 16, 1904.
2. Ibid., Jan. 7, 1905.
3. Virchow's Archiv., vol. l.
4. Archiv. f. d. ges. Physiol. Bonn, 1872, vol. vi.
5. Johns Hopkins Hosp. Rep.., Baltimore, 1896.
6. Treatment of the Abdominal Viscera Through the Colon. THE JOURNAL A. M. A., Oct. 7, 1899, and May 5, 1900.
7. An Experimental Study of the Splanchnic Circulation and Its Relation to the Stomach and Intestines. (Amer. Therapist, November, 1900.)
8. Surgical Shock. THE JOURNAL A. M. A., June 19, 1897. The Care of Patients During Surgical Operations. Med. Rec., Aug. 11, 1900.

FOOD.

The physiology of digestion can not be considered without a careful study of the substances to be digested, viz., the food. The composition and amount of food must be adjusted to the physiologic requirements. The amount and manner of preparing food and the intervals between meals are so important as to constitute a special research. Milk may be of proper composition, but in large clumps it is in an improper state for the normal process of digestion. Proteids, carbohydrates and fats may be so badly combined as entirely to destroy digestion. The quantity of food may be so large as to block the whole train of digestion. Food taken at improper intervals may so disturb the rhythm that it will interrupt the process of digestion and result in dyspepsia.

The U. S. Agricultural Department has made most extensive research on the problem of food for hogs and cattle, and the knowledge thus obtained is being utilized in its application to man. When the importance of this branch of medicine is more generally realized we may expect just as good results in the study of the physiology of dietetics applied to man as we have seen in the work on animals.

TREATMENT.

Before a rational course of treatment can be determined, we must gain a clear conception of all the factors concerned in the symptom complex—dyspepsia. As an example, the disturbance of secretion may present the most apparent indications for treatment in a given case, such as excessive secretion of gastric juice and mucus. The disturbance of secretion may depend on diminished motility of the stomach due to atony, the direct result of some errors of diet. This may be excess of food at one time, too frequent meals, or improper composition, or preparation of food. The treatment, then, is first to correct the errors of diet and to restore the atonic condition of the stomach wall. In ordinary cases the atony will disappear by simple dietetic measures. When the atonic condition has reached a stage of extreme fatigue of the gastric musculature and some degree of dilatation, however, dietetic measures alone will not suffice to correct the gastric atony. We must resort, therefore, to some measure that will directly stimulate and restore gastric movement and muscle tonus. Measures for treating this condition will be alluded to later. If the anomaly of secretion be the direct result of infection from infected food, or germs reaching the stomach from an infected condition of the mouth, such as pyorrhea and decayed teeth, or from an infected nasopharynx, then we are dealing with gastritis due to these causes, which must first be eradicated. In chronic cases of long standing, removing the original cause will not correct the evil, for the mucous membrane is infested with growing colonies of micro-organisms; in other words, the stomach is infected. I do not necessarily mean that the germs have penetrated the wall of the stomach, for this would constitute an interstitial form of infection (outside the surface of the mucosa), but, as I have shown, colonies develop on the walls of the stomach when conditions are made favorable for their growth. This leads us to an interesting point that was developed in experimental work. When mustard, $AgNO_3$, or other irritants were introduced into the stomach of dogs, the mucous membrane became reddened, swollen and showed, first, an increase of HCl and ferment, followed by a decrease of gastric juice. There continues a formation of mucus, an exudate of plasma, some fibrin, leucocytes and exfoliated epithelial cells. After a certain period, colonies of micro-organisms developed in this exudate, adhering to the mucous membrane; the colonies developed from the germs already in the normal stomach before the irritation occurred. This we can apply to clinical observation in case of gastritis. Constant irritation of the stomach by errors of diet may irritate the mucous membrane and may cause an exudate to form which furnishes the necessary condition in the stomach for colonization on the mucous membrane. In the treatment we can understand why removal of the errors of diet alone does not remove the diseased condition and why chronic gastritis may continue even after all the etiologic factors, such as errors of living, have been removed. It is here that Art assists in correcting what unaided Nature can not accomplish. If left untreated, the condition may continue insidiously and may extend along the duodenum and into the bile and pancreatic ducts.

Dyspepsia and catarrh were formerly considered as synonomous terms; catarrh is due to a variety of causes, chief among them being some form of irritation that causes a flow of gastric juice or mucus or both.

Dyspepsia may include among its varied symptoms different forms of catarrh and anomalies of secretion and motility. It will be seen, therefore, that we must approach these conditions in our treatment with a clear understanding. When, added to these symptoms, circulatory disturbances exist to complicate matters, the indications for treatment appear exceedingly complex, but this is not generally the case. A single method of treatment may correct all the various disturbances at once. As for example, if in a case of acute dyspepsia as a result of grave errors of diet, the stomach becomes overloaded it can not expel its contents; retention results; the gastric muscle becomes fatigued and can not expel the accumulated mass; the stomach dilates, and stagnation and fermentation result, with marked circulatory disturbances. The heart beats rapidly to keep up the failing circulation, dyspnea follows, feet and hands become cold, the face is blanched and perspiration appears on the forehead, accompanied by a feeling of impending death. The physician introduces the stomach tube, removes the contents, performs gastric lavage with hot water; and the whole picture is changed. If the improvement does not result, the lavage is repeated until recovery is complete. What has occurred in this simple treatment? The load has been removed from the stomach. This is not all that has been accomplished, however, for frequently patients in this condition have vomited up the stomach contents and still continued to suffer. By the lavage the stomach has been distended with water and this has been removed to be repeated over and over again. Each time the water is removed the stomach retracts. The tension produced by the water and the release of the tension excites the peristalsis of the stomach.

In chronic gastric diseases, lavage is useful not only because it removes the stomach contents, but for other reasons. It should be remembered that repeatedly removing the gastric contents by lavage removes secretions that are very essential to digestion, as well as peptones and albumoses that linger in the stomach, especially when it is in a state of atonic dilatation. The relief experienced by the patient immediately after lavage appears to be a valid reason for the procedure, but, as will be shown later, this can be accomplished by emptying the stomach through the normal channel, viz.,

through the pylorus into the intestines. By lavage we attempt the removal of mucus, exfoliated epithelial cells and food detritus that adhere to the mucous membrane. The ordinary method of lavage is the introduction of water through a single tube into the stomach and allowing the water to syphon out again. The single stomach tube through which the water passes into the stomach must have openings sufficiently large to allow the fluid to return through the tube with a flow equal to that with which it entered. With such a tube there is not sufficient force of the inflow to dislodge the mucus and detritus from the stomach wall.

Another important value that is attributed to the use of lavage is the stimulating effect of water projected against the stomach wall, producing a sort of percussion effect mechanically to excite peristalsis and the circulation of the glandular structure of the stomach. Malbranc[9] and Rosenheim attempted to employ a gastric douche by having the tube made with minute as well as with large openings at the end and by elevating the irrigator to obtain the force of gravity. This was termed a stomach douche. This fails to accomplish the purpose, because if the openings of the stomach end of the tube are made small enough to obtain the necessary force and velocity for the fine jets or streams projected against the mucosa the water can not siphon off readily, and, therefore, the return flow is cut off. If the openings are large or one large and several small openings, the force of the inflow is lost, the pressure falls and the object of the douche is defeated. To obtain the desirable advantage of lavage and douche with a single apparatus, we may employ a double tube, one small caliber tube for the inflow attached parallel to a large-sized tube for the outflow, in proportion something like the old-fashioned shotgun, with ramrod alongside the gun barrel, the ramrod representing the small or inlet tube and the gun barrel the outflow; this has an opening of as large a caliber as the largest single stomach tube. This arrangement more readily conforms to the anatomic shape of the esophageal opening, which is oval (not round), flattened in the anterio-posterior diameter. The double tube, being somewhat oval in shape, is more easily introduced into the stomach and is more agreeable to the patient than the round single tube. My double stomach tube is so constructed that the end of the smaller inlet tube reaches to the upper portion of the stomach, just beyond the cardiac orifice, and is perforated with small needlelike openings, while the larger or outlet tube extends to the greater curvature or floor of the stomach, with large end and side openings to allow free outflow of the stomach contents. The advantage of this arrangement is readily seen when put into use. The water passing down through the smaller tube under high pressure is projected with considerable force and velocity in a fine jetlike shower against the upper and lateral walls of the gastric mucosa, and the water, as it reaches the floor of the stomach, passes immediately out of the stomach through the large outflow tube, thus thoroughly cleaning the wall as well as the lumen of the stomach and imparting a powerful invigorating stimulation which is of decided advantage in secretory and motor disturbance of the stomach. As all the portions of the stomach can be reached by this method, it is of decided advantage when local medication is desired. To obtain the necessary pressure to force the water in a fine shower as a gastric needle douche, the irrigator may be elevated or, what is better, the air may be compressed above the water; this will force the water out, the degree of the force and velocity, of course, depending on the amount of pressure used.

In severe forms of gastritis with thick mucus adhering to the stomach walls, and with a sluggish condition of the local circulation and an atonic state of the stomach not relieved by lavage, it is necessary to resort to some other mechanical means of cleaning and stimulating the stomach. The removal of the contents free in the stomach is easily accomplished by lavage, but in the more advanced forms of gastric disease the irritating substances in the stomach are not free but are adherent to the walls of the stomach, as can be observed in postmortems.

The problem has been how to obtain a practical method of removing this tenacious mucus and other material from the wall, of stimulating the motor and secretory apparatus and of exciting the sluggish circulation. Water, however forcibly introduced into the stomach, will not always dislodge the accumulations. Even postmortem it is difficult to remove the mucus with a forcible flow of water on the mucous membrane under the faucet. If a small stomach tube is turned or revolved while in the stomach the mucus will adhere and form around the outside of the tube, and if the turning be continued and increased in rapidity quite a large amount of mucus can be removed in this way. At the same time a stimulating massage and vibratory effect is imparted to the gastric wall. If a flexible cable is inserted within the small tube so that the tube fits close to the cable it renders the procedure much more effective. The spiral end of the cable is covered with cotton or wool over which is slipped a thin rubber finger cot, which renders the apparatus easier to introduce and less injurious than the open end of a stomach tube, which often has comparatively sharp edges. When this apparatus, known as the gyromele, is encased in a short outer stomach tube introduced into the stomach, the outer end is turned by an apparatus like a surgeon's drill. The value of the procedure is chiefly found in those refractory cases that do not yield to treatment by lavage, diet, drugs, electricity or mineral springs. In the progress of treatment the improvement, such as retraction of a dilated stomach, can be noted from time to time by palpating the revolving sound through the abdominal walls.

In certain forms of gastric dyspepsia, with atony of the stomach and sluggish circulation, the mucus accumulations may not appear so evident and cleaning out of the stomach is not indicated; in fact, to use lavage in such cases only seems to increase the trouble. The patients grow thin and weak from the result of lavage in that, as previously stated, the secretions, peptones and albumoses delayed in the stomach are also washed out. Even if lavage is performed when the stomach is empty (which is seldom the case), the water coming in direct contact with the mucosa acts as an irritant; especially is this noticeable in cases of hyperchlorhydria. After a few treatments, lavage, therefore, must be abandoned, but lavage, as we know, mechanically stimulates the stomach by the stretching on introduction of the water and the retraction after its withdrawal. If a similar procedure is carried out at frequent intervals, without the great detrimental effect that we obtain from washing out the gastric cavity, we may obtain the valuable results of regular exercise of the stomach and of the heat of the water acting on the circulation. This can be accomplished by attaching a small, thin intra-

9. Berl. klin. Wochftchr., 1878, No. 4.

gastric bag which may be rapidly distended, and then its contents rapidly withdrawn, thus obtaining a high degree of mechanical stimulation and the physical effects of heat. This can be repeated frequently without injury to the stomach or danger to the patient.

In cases of marked dilatation due to atony of the gastric musculature, the water seeking the deepest portion of the stomach causes the stomach to sag downward. Even a pound weight seems excessive for a weak stomach and as water is non-compressible it does not promptly excite peristalsis of the stomach, just as in atony of the bowel enemas frequently increase the trouble rather than correct the constipation. To overcome this difficulty we may introduce air into the bag within the stomach instead of water. This inflation distends the stomach in all directions. The stomach on inflation rotates forward and upward; this lifts up the stomach instead of bearing it down as when water is used. As the air can be released promptly, it causes rapid retraction of the stomach. Frequently repeated, this procedure excites peristalsis and restores the motor function of the stomach.

In most cases the intragastric bag can be dispensed with and the air may be forced directly into the stomach, moderately distending it, and then allowed to escape through the tube. This direct method is very useful when we wish to apply heated vapor to the mucous membrane. Local medication can be added. Volatile antiseptics and stimulants such as menthol and oil of cloves can be put in a bottle containing water heated to a temperature of from 55 C. to 60 C. (131 F. to 140 F.) Compressed air is then passed through the water and the medicated vapor is forced through the double tube into the stomach. This procedure constitutes a pneumatic gymnastic or exercise of the stomach.

Electricity.—Much has been written on the use of electricity in gastric disease, but there is no certain data that either the faradic or galvanic current has any effect in exciting secretion or motility of the stomach. Experimentally, electricity has no effect on the stomach, and clinically it is an open question.

Diet.—No method of treatment can be entirely successful without an intelligent system of diet, adjusted to the requirements of the individual case. If the stomach is already irritable this condition should not be augmented by giving irritating foods. Bouillon and beef tea or beef juice should be avoided in cases of hyperchlorhydria and other irritable states. When meat is prescribed, the extractives first should be removed and discarded. When the stomach is in a state of atonic dilatation the food should be finely divided by chopping or grinding. In some instances it may be necessary to give meals at frequent intervals, while in other cases, when the stomach is slow in expelling its food, sufficient intervals should be allowed between meals to allow the stomach to empty itself. The activity of the stomach should be determined by frequent examinations during the course of treatment, bearing in mind that this is one of the most important factors. In cases of sluggish bowel with constipation, bran may be prescribed with most excellent results; half a cupful of wheat bran with either hot water or milk may be given once daily.

Drugs.—The more closely we study the pathology of gastric diseases the less do we find drugs to be indicated. Aside from the treatment of symptoms, such as hyperacidity with alkalies and hypoacidity and hypopepsia with HCl and pepsin, there is but little real value in drug medication in these conditions. Antiseptics are apparently efficacious but the entire object of treatment in these cases is to produce normal conditions of the stomach in which autoantiseptics are produced and autoseptics take place, hence antisepsis by drugs is unnecesary.

Tonics such as nux vomica or its alkaloid strychnin are generally recommended to tone up the muscle of the stomach. According to my experiments on dogs, these drugs have no effect on the motility of gastric muscle, and this is confirmed by clinical experience. It is an error to prescribe drugs that may irritate the stomach without the certain knowledge that they will produce beneficial results.

Surgery.—In complete mechanical obstruction of the pyloric orifice, an outlet for the stomach must be reestablished by surgical interference, and, likewise, in certain cases of ulcer of the stomach, relief may be obtained by surgical means. Dyspepsia due to atonic dilatation (fatigue of the gastric muscle) as well as catarrhal conditions do not require surgery.

After a number of years of clinical experience I have found that the methods of treatment outlined above are the most rational and effective means of permanently restoring to health a large variety of dyspeptic cases suffering from chronic gastritis and from atonic dilatation of the stomach.

PUERPERAL ARTHRITIS.*

EDWARD E. MORSE, M.D.
Assistant Professor of Obstetrics George Washington University.
WASHINGTON, D. C.

The following case of puerperal sepsis is presented for consideration:

History.—Mrs. X., aged 20, primipara, with a history of gonorrhea a few months earlier, was delivered on June 9, no unusual features characterizing the labor. On the third day following delivery she complained of a chill and the temperature was found to be 101 F. With a slight morning remission, the temperature continued to rise until 105 F. was recorded on the third day. I first say the case at this time.

Course of the Disease.—For five weeks the temperature ranged between subnormal and 105, on July 20 becoming normal and so remaining for five days. At no time during the illness was there evidence of much pain or tenderness about the uterus and appendages, the predominant and alarming feature being a profound exhaustion. On July 25, the patient complained of tenderness in the left shoulder and elbow; temperature was 101 F., and continued to rise to 102.8, the pain localizing itself in the opposite elbow, followed successively by involvement of the left wrist, left knee, right wrist and right knee. All these joints became swollen, puffy and exquisitely painful, the patient complaining of the slightest touch and presenting unquestionable evidence of great suffering. The joints showed the usual and typical appearance of an ordinary arthritis.

Treatment.—The salicylates were prescribed but proved ineffectual from failure to retain them. The pain was controlled by morphia and the affected parts were wrapped in raw cotton. Although still painful, improvement followed, the temperature becoming normal on July 30.

It is to this local evidence of sepsis, as manifested in the involvement of the joints, that I call attention especially.

Inflammation of the joints occurring in childbed was noticed as early as 1852 by Charcot. The following year, Sir James Y. Simpson of Edinburgh, whose broad observation seemed to have grasped every detail of midwifery, drew attention to this interesting condition, and

* Read at the meeting of the Clinico-Pathological Society, 1905.

he was followed later by numerous writers, chiefly of the French school, all of whom united in describing the condition as puerperal rheumatism. That the subject was considered an important one, is evidenced by the many papers on record and the care and attention devoted to a description of the cases cited. Celles, whose doctorate thesis before the French Academy was published in Paris in 1881, gives several cases occurring under his observation in which the disease developed after confinement or as an accompaniment or sequel of some diseases of the reproductive organs. As the result of his studies, he eliminated cold and exposure as causative agents, both of which up to that time had been regarded as potent factors in the production of rheumatism. He noted the fact, however, that, in all cases, fever and a general constitutional disturbance accompanied or preceded the development of the arthritic symptoms. It must be remembered that in 1881, the year in which Celles published his essay, bacteriology was in its infancy and, as a consequence, modern pathology was unknown. Puerperal sepsis, as an infectious disease, due to the presence within the body of bacteria which, by their activities, produced changes of a local or general inflammatory character, was not understood. He, therefore, joined with his predecessors in describing the inflammation of the joints occurring after confinement as puerperal rheumatism, a view which to this day still holds, as may be seen by referring to some of the recognized authorities on obstetrics. Hirst[1] says that arthritis occurring during the puerperal state is either a local manifestation of septic infection, or else, as a rheumatic arthritis, is simply an accidental intercurrent affection. He also states that the diagnosis between septic arthritis and simple acute rheumatism is not always easy, and that there may be very little evidence of general septic infection, as the arthritis may make its appearance late in the puerperal state, and may be accompanied by very moderate fever of an irregular type. It is more apt to appear in women who have had gonorrhea. Edgar, in discussing the symptoms and diagnosis of puerperal septic arthritis, says that the diagnosis presents little difficulty, although the condition has been mistaken for acute articular rheumatism.

It is apparent, therefore, that an arthritis occurring within or shortly after the puerperium has been recognized as one of two forms, namely, either a local manifestation of a general septic condition or else an inflammation of a distinctly rheumatic character with no apparent relation to a condition of sepsis. It will be observed that the graver forms of the disease, leading to suppuration and probable ankylosis of the joint, are considered septic, while the milder forms, in which the inflammation subsides after a few days, leaving no permanent traces of its presence beyond a slight tenderness, have been classed as rheumatic or non-septic.

I venture to express the opinion, with due respect to the eminence and authority of the writers previously quoted, that this view is erroneous; that the distinction between sepsis and rheumatism is only apparent and not real; that all cases of arthritis occurring during the puerperium (excluding those due to external injuries, traumatisms, etc.) are septic, and, further, that a puerperal arthritis should be so recognized and so treated.

To establish the truth of this position involves an inquiry:

First, into the conditions, specific and general, which may lead to the development of an arthritis.

Second, into the relationship, if any, which may exist between these several productive or causative agents.

A non-traumatic arthritis occurs in many different diseases. In view of its prominence as a symptom in rheumatism, its presence is oftentimes considered a proof of rheumatic origin, in spite of the well-known fact that an arthritis in itself is not necessarily rheumatic and, further, that an arthritis is not a necessary accompaniment of rheumatism. The worst cases of rheumatism in many instances have been characterized by few, if any, symptoms of the joints. An arthritis may develop during the progress of any of the acute febrile diseases, especially those of bacterial origin, such as scarlet fever, typhoid fever, gonorrhea, puerperal septicemia. The presence within the blood of any active bacterial agent is sufficient to produce an inflammation of the joints, provided the infective agent is one which has an especially destructive power for serous surfaces, or that the condition of a particular joint or joints affords a favorable nidus for the localization of the germs. In childbirth, an especially good field is afforded for the infection of the patient in consequence of the continuous and far-reaching extent of the genital canal, as well as the bruising and lacerations of the soft parts incidental to delivery, especially if the necessary measures to prevent infection are neglected or impossible of execution.

In a series of investigations conducted by Krönig to establish as far as possible the identity of the particular germs most frequently found in cases of puerperal sepsis, out of a total of 179 cases 75 were found to be due to streptococci, 4 to staphylococci, and 50 to the gonococcus. Whether an arthritis has followed an infection from the streptococcus pure and simple I am unable to state from actual observation. There remains, however, no question as to the effects of an infection by the gonococcus. In innumerable cases, puerperal and non-puerperal, the presence of this germ has been demonstrated not only in the joints but in many other portions of the body, its presence always serving as an exciting cause for varied and profound changes. These cases of infection were formerly designated gonorrheal rheumatism, through ignorance of the real nature of rheumatism and a failure to comprehend the extensive and all-embracing character of a gonorrheal sepsis.

Our present views on the subject are well expressed by a writer in a recent number of the *Lancet*, who states that to the original idea of gonorrhea as a purely local disease with acute and possibly with chronic manifestations also of a local character, is now being added that of a general malady, sometimes having an acute septicemic or pyemic character, at others producing important inflammatory lesions in many different forms, and that practically no tissue can claim immunity from attack. In women with a history of recent gonorrhea the chances of an acute and general infection are many, and Jewett says that the gonococcus is the only pyogenic coccus which can live and thrive in the vaginal secretion, and further, that the organisms persist in the crypts of the cervical canal, where they live as parasites and simply find more suitable conditions for development in the first few days of the puerperium.

Theories regarding the etiology of rheumatism have been as numerous as they are varied. Cold and exposure, its relation to gout, and to excess of acid in the blood, especially the lactic-acid idea, were all at one time or another considered potent factors in the origin of rheumatism. To-day, we consider rheumatism an acute in-

1. Text-Book of Obstetrics, 1898, p. 629.

fectious disease, presenting as it does all the forms of such a disorder. This theory has its origin in the investigations of bacteriologists who have united in saying that there exists in the blood of rheumatic subjects a micro-organism which is described as the *Micrococcus rheumaticus*.

According to Walker,[2] rheumatism in its character of an acute illness presents all the stigmata of an attenuated septicemia. In 1875, Klebs detected micro-organisms in cardiac valves which were affected with rheumatic valvitis, and Popoff, in 1887, obtained cultures from the blood of rheumatic subjects which on inoculation gave rise to pericarditis, endocarditis and arthritis. Many organisms were found, all different, and the tendency was to regard rheumatism as an infection by attenuated pyogenic staphylococci or streptococci; while certain features were attributed to a mixed infection. Walker, whose investigations have been thorough and complete, says that he believes in a specific organism, having found it present in 15 cases. This organism is described as a tiny micrococcus arranged in chains or pairs.

He says that it is a culture indistinguishable from an ordinary streptococcus and, further discussing its identity, states that at any rate it may, with reason, be affirmed that a micro-organism, morphologically and culturally indistinguishable from a streptococcus, is constantly associated with rheumatic lesions and is the only lesion so associated. Gustav Singer says that it is impossible to establish the specific character of an organism which is indistinguishable from an ordinary pyogenetic streptococcus and, therefore, holds that the infection of rheumatism is due to an attenuated streptococcic septicemia.

The recognition of rheumatism as an acute infectious illness of a septicemic character places it in the same class with all other diseases which have been found to have a bacteriologic basis. Sepsis requires but two conditions for its development: a favorable soil, and an infective agent. In puerperal septicemia, these two essentials are present, as the condition of the birth canal after labor affords an ideal soil for the implanting of infected germs. It makes no difference which germs may cause the infection, whether the ordinary streptococcus which Jewett found to predominate in his cases, the staphylococcus, the gonococcus or the *Diplococcus rheumaticus*, the result is the same, namely, a septic infection, and it should be so recognized. An arthritis occurring during puerperal sepsis and forming a part of the infective process, may be due to the gonococcus, to the particular germ of rheumatism or any other germ or group of germs, which by their presence in the body generate a poison sufficiently severe to affect the joints; but to speak of an arthritis following labor and occurring during the puerperium as septic in one instance because of certain gross and superficial characteristics and as rheumatic or non-septic in another instance, is to fail to grasp the real nature of rheumatism and to restrict puerperal sepsis to narrow limitations altogether unwarranted by facts. The attempt to draw a distinction in diagnosis between a septic arthritis and a rheumatic or non-septic arthritis based on symptomatology and clinical observation is illogical and unsatisfactory. In reality, the distinction is purely one of degree and not of kind. The recognition of all forms of arthritis, whether single or multiple, suppurative or non-suppurative, as sepsis in varying forms, is perfectly consistent with facts so far as ascertained in puerperal infection. Commonly three forms of sepsis are recognized: Sapremia, or septic intoxication; septicemia, or true sepsis, and pyemia, the stage of suppuration. The first mentioned either disappears or develops into true septicemia. In this form of infection, an arthritis may develop in one joint or more; it may be a matter of a few hours or days. Should it pass into the stage of suppuration it becomes pyemia and differs in no particular from a pyemic abscess occurring elsewhere. In pyemia, the immediate cause of localized infection are small particles of infected material, oftentimes small emboli. I think I can not do better in conclusion than to quote the language of Winckel[3] on the subject of infections of the joints.

> Very often (21.6 per cent.) we also find inflammations and suppurations in the articulations, especially in the shoulder, elbow, wrist, knee, hip, sternoclavicular and pelvic joints. The synovial membrane is usually thickened and reddened; the cartilage appears unchanged or slightly opaque; sometimes the cartilage becomes necrotic and may be followed by caries of the bone with external perforation of the pus. In 22 per cent. of the cases numerous abscesses of the muscular or cellular tissue occur; they usually spring from the muscular connective tissue. The frequent occurrence of miliary abscesses proves that in this form of puerperal pyemia we have to deal not with the wedging of large masses, but with finely divided molecular substances. The metastatic inflammation of the joints, the pleural cavities, etc., indicate that the infectious material is often carried to the infected regions in a finely divided form.

In other words, an arthritis may be set up by any one of the numerous infective germs, which may be comparatively mild and subside within a few days, the joint being the seat of inflammation, but not of suppuration. On the other hand, the infection may be of so intense a character as to produce suppuration early, or later by the deposition within the articulation of small infected emboli or particles. The changes thus set up are septic in character and constitute a true sepsis.

2. Practitioner, London, 1903, p. 185.

3. Edgar's translation, chapter on "Venous Thrombosis and Pyemia," p. 817.

THE SEQUENCE OF THE PATHOLOGIC CHANGES IN APPENDICITIS.

A STUDY OF THE SIGNIFICANCE OF THE LESIONS FOUND IN DIFFERENT STAGES OF APPENDICITIS, BASED ON THE PATHOLOGIC FINDINGS IN A SERIES OF OPERATIVE CASES.

E. MACD. STANTON, M.D.

Assistant, Bender Laboratory; Lecturer in Histology, Albany Medical College.

ALBANY, N. Y.

Within recent years much has been written concerning the pathology of appendicitis. The anatomic characteristics of the different varieties of appendicitis, together with the secondary lesions accompanying the primary appendiceal inflammation, have been most carefully described and abundant statistics dealing with the relative frequency of the different types of appendiceal and periappendiceal lesions exist. In spite of all this accumulated knowledge, the subject of the pathology of appendicitis is not by any means a closed chapter, but continues to be prominent in medical discussions and literature. The reason for this, perhaps, may lie in the fact that it has not yet been generally recognized that the different pathologic conditions, as they are encountered at operation in cases of appendici-

tis, represent, for the most part, simply different stages of an inflammatory process involving primarily the appendix and accompanied, in a large proportion of cases, by a more or less extensive secondary involvement of the peritoneal cavity. Most of the studies dealing with the description and classification of the different pathologic varieties of appendicitis are based on a study of the lesions without reference to the duration of the symptoms previous to the observation of the pathologic condition and for this reason such studies throw little light on the pathologic history of the disease.

A study of the pathologic history of appendicitis resolves itself into a study of the processes of inflammation and repair as they occur in this disease, and a knowledge concerning the progress of these processes can best be obtained by a combined clinical and pathologic study of a sufficiently large series of cases, tabulating the pathologic findings according to the time which has elapsed between the onset of the attack and the observation of the pathologic condition. When the lesions are studied in this way, there is found to exist a striking general uniformity of the microscopic appearances at each of the succeeding periods following the onset of symptoms. This uniformity in the microscopic appearances exists in spite of decided variations in the gross appearances of the appendices, and the fact that the microscopic features prominent at one period may be either increased or diminished in preceding or in subsequent stages, shows that we have to do with a continuous process and that it is probable that the majority of cases presenting the characteristic lesions of patients operated on on the tenth day would, seven days earlier, have presented the lesions characteristic of the third day. The results of such studies, therefore, should serve not only as a basis for a knowledge of the pathologic history of the disease, but should aid also in the diagnosis of the probable lesions existing at any given period during the attack.

OBSERVATIONS OF CASES.

The following observations are based on a study of the condition of the peritoneum as found at operation in 485 cases of appendicitis[1] occurring at the Albany Hospital during the past six years, and of the condition of the appendix in 188 of these cases, the descriptions and sections of which are on file in the Bender Laboratory. The pathologic findings in this series of cases were studied with special reference to the relations existing between the character of the lesions and the stage of the disease.

In summarizing the results of the observations in this series of cases, those cases operated on during the first, second, third, fourth, fifth and sixth days of the attack are considered in separate groups for each day. Those cases operated on from the seventh to the tenth, from the eleventh to the fifteenth and from the sixteenth to the thirtieth day are considered in three corresponding groups; while all cases operated on one month or more after the occurrence of a definite attack are considered as a separate group.

1. The data referring to the condition of the peritoneum is taken from the notes made at the time of operation: all else is based on the descriptions and sections on file in the Bender Laboratory. The histologic observations have necessarily been confined to those cases, the sections of which have been preserved and are available for present study. While the anatomic variations, especially as regards the condition of the peritoneum, are so variable as to require a large series of cases on which to base satisfactory observations, this is not the case with the histologic changes which are so uniform that it is not deemed necessary to include a larger series of cases.

The following is a summary of the more striking features of the pathologic process:[2]

First Day Group.—This was made up of ten patients operated on during the first twenty-four hours following the onset of symptoms. In two cases (20 per cent.) there was a seropurulent intraperitoneal exudate without perforation of the appendix. In one other case, the omentum was adherent by a fibrinous exudate to a gangrenous appendix. The gross appearances of the nine appendices studied histologically varied greatly. Two showed plainly visible gangrenous areas, one was described as normal, while in others the only macroscopic evidence of disease was a congestion or slight opacity of the peritoneum, with a swollen or hemorrhagic mucosa.

In sharp contrast to the often apparently insignificant gross lesions is the microscopic picture, which is essentially similar in all cases and consists of an intense, diffuse, polynuclear leucocytic infiltration with focal areas of hemorrhage and necrosis involving all coats with a more or less extensive destruction of the mucosa and, in many cases, a fibrinous or fibrinohemorrhagic exudate on the peritoneal surface. One of the most striking features in these cases is the presence throughout the majority of the sections of numerous areas of necrosis. These areas are larger, but are not more numerous in those cases which show macroscopic evidences of gangrene.

Second Day Group.—This was made up of twenty-three patients operated on during the second twenty-four hours following the onset of symptoms. Eight (34.8 per cent.) of the cases in this group were accompanied by intraperitoneal fluid exudates, usually of considerable extent and of a seropurulent or purulent character. As in the first-day cases, the appendices in this group, which were studied histologically, presented no uniformity as to gross appearances. Some of them are described as "gangrenous," others as "catarrhal" and "ulcerative" or "slight periappendicitis."

Microscopically, all the appendices show an intense leucocytic infiltration involving all coats, together with a more or less extensive ulceration of the mucosa, while 70 per cent. show a well-marked fibrinous or fibrinopurulent exudate on the peritoneal surface. In those cases which presented macroscopic evidence of gangrene the areas of necrosis as seen microscopically are decidedly more extensive than in the similar cases of the first-day group, while in those cases which did not present macroscopic evidences of gangrene the focal areas of necrosis so prominent in the first-day cases are still evident in the majority of sections, but are often obscured by the leucocytic infiltration.

Third Day Group.—This was made up of fifty-three patients operated on during the third day following the onset of symptoms. Twenty-nine (53.7 per cent.) of the cases in this group were accompanied by intraperitoneal fluid exudates which were of a distinctly purulent character and usually described as periappendiceal abscesses. The macroscopic evidences of disease were distinctly more prominent than in the earlier cases. Forty per cent. of the appendices studied histologically were

2. The accompanying charts show graphically the relative frequency of the various types of lesions grouped according to the different periods as enumerated above and also serve to give an idea of the relationships existing between the character of the pathologic lesions and the duration of the disease. The absence of irregular fluctuations in the platted curves is evidence that the series of cases here studied has been sufficiently large for the purposes of this investigation, although the relative heights of the different curves must vary somewhat in different series of cases.

described as "gangrenous" and all but three of the others as "acute" or "acute ulcerative."

Microscopically, two recurrent cases show decided chronic changes, but no evidence of an acute process. The remaining cases all show a diffuse inflammation like that seen in the earlier groups. In the macroscopically gangrenous cases the necrosis is prominent, while in the non-gangrenous cases focal areas of necrosis are seen only in the mucosa. The most striking histologic feature which distinguishes this group from the earlier groups is the evidence of beginning repair as seen by the presence of fibroblasts in all sections. These new-formed connective tissue cells are especially numerous in the region of the peritoneum, although present in other areas, particularly in those cases showing the least marked leucocytic infiltration.

Fourth Day Group.—This was made up of thirty-one patients operated on during the fourth day following the onset of symptoms. Seventeen (54.5 per cent.) of the cases in this group were accompanied by purulent periappendiceal exudates usually described as abscesses. With the exception of one normal and one chronic atrophic appendix (microscopic diagnosis), all of the appendices in this group presented well-marked anatomic changes in general similar to those seen in the third-day cases.

Microscopically, the gangrenous cases show large areas of complete necrosis, the histologic picture differing but little from that seen in the gangrenous cases of the third-day group. In sections of the non-gangrenous cases, and in sections taken at some distance from the necrotic areas in the gangrenous appendices, the most noticeable histologic feature which distinguishes this group from the preceding one is a decided increase in the relative number of fibroblasts and the presence of numerous lymphocytes and, in several cases, plasma cells. In those cases accompanied by a periappendiceal exudate a few fibroblasts and many new-formed blood vessels can be seen extending into the exudate from the peritoneal surface. Focal areas of hemorrhage into the exudate occurring from these new-formed blood vessels are seen in many of the sections.

Fifth Day Group.—This was made up of twenty-seven patients operated on during the fifth day following the onset of symptoms. Fifteen (55.5 per cent.) of the cases in this group were accompanied by periappendiceal pus. With the exception of one recurrent case, all of the appendices presented easily recognizable anatomic changes most evident in the mucosa or on the peritoneal surface.

Microscopically, the lesions may be classified into two rather sharply defined groups. In the cases presenting macroscopic evidences of gangrene, the necrosis and polynuclear leucocytic infiltration is the predominating characteristic, although the repair process is well advanced in several instances. In the non-gangrenous cases the polynuclear leucocytes have practically disappeared except at the surfaces of the ulcerations in the mucosa and of the periappendiceal exudates. Throughout the coats of the appendix there is a marked increase in the number of fibroblasts and often an intense lymphocytic infiltration. In the periappendiceal exudates the new-formed blood vessels penetrate to a greater distance than in the fourth-day group and this granulation tissue is decidedly richer in fibroblasts.

Sixth Day Group.—This was made up of twenty-four patients operated on during the sixth day following the onset of symptoms. Twelve (50 per cent.) of the cases in this group were accompanied by periappendiceal pus and all the appendices showed well-marked anatomic changes. The partially organized periappendiceal exudates were very noticeable in those cases accompanied by abscess formation.

Histologically, the repair processes are decidedly more advanced than in the fifth-day group. The gangrenous cases show well-marked evidences of repair, the histologic picture of which is similar to that seen in the non-gangrenous cases of the preceding group. A number of these cases, however, present the picture of a fresh acute process engrafted on the subacute process, there being a diffuse leucocytic infiltration with areas of hemorrhage and necrosis, the latter often involving areas rich in fibroblasts. The non-gangrenous cases now show areas in which the fibroblasts are massed together and elongated so as to resemble young connective tissue cells. Small ulcers in the mucosa have apparently been largely repaired.

Seventh to Tenth Day Group.—This was made up of one hundred and six patients operated on from the seventh to the tenth day of the attack. Fifty (47.1 per cent.) of the patients operated on during this period were accompanied by periappendiceal pus, which in all but six cases was more or less localized and usually accompanied by marked evidences of organization. Anatomic changes, for the most part, were well marked, particularly so in those cases accompanied by partially organized periappendiceal exudates. In the cases unaccompanied by periappendiceal exudates the anatomic lesions were decidedly less prominent than in the earlier groups, and four of the appendices studied histologically were described anatomically as cases of catarrhal appendicitis.

Histologically, the repair process has become still more advanced, so that in 18 per cent. of the appendices in this group the organization is so far advanced as to present the picture of a distinctly chronic process, the evidence of a previous active inflammation being shown by the presence of new-formed fibrous tissue which is rich in connective tissue cells. In addition to the new-formed connective tissue in these cases, numerous focal collections of lymphocytes are seen, which are most noticeable in the subperitoneal tissues and muscular coats. In 64 per cent. of the appendices in this group the presence of the fibroblasts and other evidences of active repair is noticeabe, being most marked in those cases showing partially organized periappendiceal abscesses. Eighteen per cent. of the cases show evidences of an acute process, which is seen as a diffuse polynuclear leucocytic infiltration, often accompanied by hemorrhage and necrosis. In all but one of these acute cases, however, there are also evidences of an older subacute process.

Eleventh to Fifteenth Day Group.—This was made up of forty-eight patients operated on from the eleventh to the fifteenth day following the onset of symptoms. In this group but sixteen cases (33.3 per cent.) were accompanied by periappendiceal abscesses, and when present the pus was usually found in small collections surrounded by thick masses of new-formed connective tissue. The macroscopic appearances of the appendices in this group varied greatly: Two were described as "gangrenous," two as "acute," three as "normal," and the rest as "subacute," "chronic," "chronic obliterative," "chronic periappendicitis" and "catarrhal." Except in those cases showing an acute process and in those accompanied by evidences of periappendiceal or-

ganization, the gross changes in the appendices, as a rule, were not prominent.

Microscopically, 68 per cent. of the appendices present lesions of a typically chronic character, the most constant feature of which is an increase of connective tissue, usually well marked and accompanied by conspicuous focal collections of lymphocytes; the latter occur usually within the perivascular and interstitial lymph channels of the peritoneal and muscular coats. An additional 10 per cent. show a less advanced stage of repair corresponding to the predominating lesion in the preceding group. Ten per cent. show changes confined to the mucosa, such as are usually described as catarrhal appendicitis. Ten per cent. show the presence of acute inflammation, in addition to subacute or chronic changes.

Sixteenth to Thirtieth Day Group.—This was made up of forty-six patients operated on from the sixteenth to the thirtieth day following the onset of symptoms. Abscesses were present in 19 per cent. of the patients operated on at this period of the disease; this decrease in the frequency of pus being accompanied by a corresponding increase in the number of cases showing adhesions without the presence of pus. In the cases unaccompanied by histologic evidences of an acute or subacute inflammatory process, the macroscopic changes in the appendices were not prominent except in those cases showing an obliteration of the lumen or evidences of periappendiceal organization.

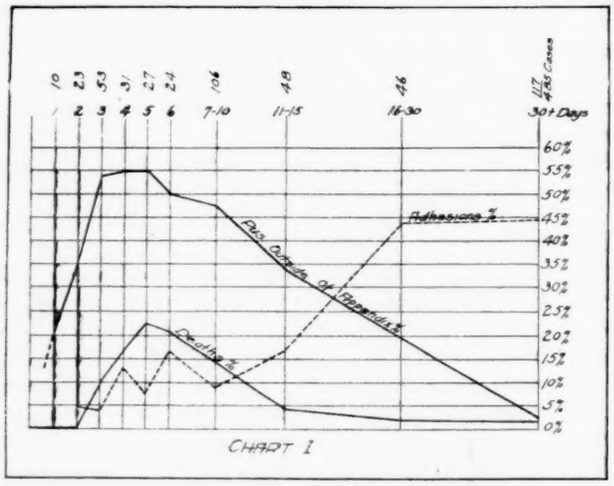

Chart 1.—Condition of the peritoneum and death rate. The term "pus outside of appendix" is used to include all cases accompanied by purulent intraperitoneal fluid exudates, either localized or general. The term "adhesions" is limited to those cases presenting organized adhesions without the presence of pus.

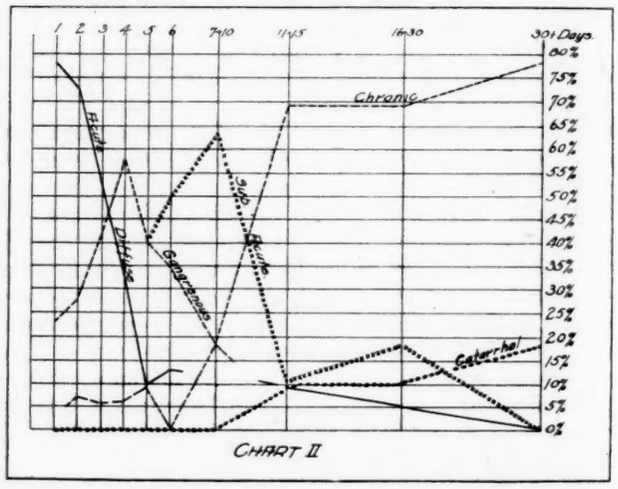

Chart 2.—Histologic condition of appendix. The term "acute diffuse" is used to include all appendices showing a diffuse polynuclear leucocytic infiltration without the presence of macroscopic evidences of gangrene. Under the term "gangrenous" are included all appendices showing macroscopic areas of gangrene with or without perforation. Under the term "subacute" are included all appendices showing evidences of active repair unaccompanied by a polynuclear leucocytic infiltration. Under the term "chronic" are included all appendices showing a distinct increase of connective tissue without evidences of active repair or leucocytic infiltration. All appendices showing changes confined to the mucosa are included under the term "catarrhal."

Microscopically, 69 per cent. of the cases show only chronic changes. In these cases the new-formed connective tissue is more fibrous than in the similar cases of the preceding group, while the focal collections of lymphocytes, so prominent in the preceding group, are now less numerous. A few cases still show acute or subacute lesions, in addition to more chronic changes. Ten per cent. of the cases must be considered as examples of catarrhal appendicitis, as the demonstrable pathologic changes are confined entirely to the mucosa.

Patients Operated on One Month or More After a Well-defined Attack.—In this group are included one hundred and seventeen patients, having, for the most part, histories of long-standing chronic, recurrent or relapsing appendicitis. In three cases (2.5 per cent.) small foci of pus were found in connection with extensive adhesions. In 44 per cent. of the cases there were well-marked adhesions, without the presence of pus. With the exception of the cases of chronic obliterative appendicitis, the macroscopic changes in the appendices were usually not prominent, and many of the cases which show an extensive increase of interstitial connective tissue were described as macroscopically normal.

No appendices in this group show microscopic evidence of an acute or subacute inflammatory process. Six per cent. of the appendices are microscopically normal; 16 per cent. are examples of catarrhal appendicitis; 52 per cent. are microscopically examples of more or less well-defined chronic interstitial appendicitis; 26 per cent. are examples of chronic obliterative appendicitis.

SUMMARY.

The character of the histologic changes is essentially similar in all of the appendices in this series which were removed during the first few days of the disease and consists of a severe, diffuse inflammation, accompanied by focal areas of hemorrhage and necrosis. These focal areas of necrosis may increase in extent during the first few days and give rise to macroscopic areas of gangrene or they may remain of microscopic size and be quickly repaired. The various anatomic varieties, such as the gangrenous, perforative and ulcerative forms, are determined by the extent and distribution of these necroses.[3]

Evidences of repair are seen as early as the third day, and in the non-gangrenous cases the histologic picture of an acute process has changed to that of a distinctly reparative process by the fifth day. In those cases in which the necrosis is so extensive as to give macroscopic

3. In connection with the well-known difficulties encountered in attempting to predict the subsequent course of a case of appendicitis seen during the first few days of the disease, it is a fact worthy of emphasis that the early histologic changes were essentially similar, irrespective of the severity of the clinical symptoms, in all the cases observed and that the later more important gross changes, such as gangrene and perforation, were dependent on the apparently more or less accidental factors which determined the extent and distribution of the necroses.

evidences of gangrene, the histologic picture of an acute process persists for a longer period, but even in these cases (unless there is a later acute process engrafted on the earlier lesion) the evidences of repair are by the sixth or seventh day the predominating feature of the lesion. Evidences of a recurrent acute process are by no means uncommon, and were present in from 10 to 15 per cent. of the cases after the first week.

During the second week of the attack the repair proceeds rapidly, fibroblasts, new-formed blood vessels and lymphocytes making up the chief features of the histologic picture. The rapidity with which the repair of the appendix itself is accomplished depends chiefly on the extent of the primary destruction and on the presence or absence of a periappendiceal exudate. By the end of the second week, in the majority of cases, the repair is so far advanced that the new-formed connective tissue may constitute the only evidence of a previous inflammation, although in cases with extensive periappendiceal exudates evidences of active organization of the exudate itself are still to be seen.

Except for the completion of the repair in those cases accompanied by more extensive periappendiceal lesions, the histologic changes occurring after the second week are seen chiefly in the more fibrous nature of the new-formed connective tissue which persists so as to be readily recognizable in the majority of cases. Of the patients operated on one month or more following an acute attack, 78 per cent. were cases of chronic interstitial or chronic obliterative appendicitis very often accompanied by adhesions. Six per cent. of the appendices were apparently normal, while in 16 per cent. the demonstrable pathologic changes were confined to the mucosa.

A notable feature seen in the histologic examination of these cases is the fact that in no instance was the pathologic change confined to the mucosa in the appendices examined during the first ten days of the attack.

In this series of cases, purulent fluid outside of the appendix was present in 51 per cent. of the patients operated on from the third to the tenth day of the attack.[4] After the tenth day the relative number of cases accompanied by abscesses decreases steadily, with a corresponding rise in the number of cases presenting adhesions without the presence of pus, which would seem to indicate that resolution by absorption had played an important rôle in the repair of this lesion. This is doubtful, however, and is probably in large measure due to the fact that the involvement of the peritoneal cavity was less extensive in those cases in which operation was delayed. In a number of cases, however, the adhesions were so massive as to leave little doubt of the previous presence of an extensive periappendiceal exudate.

After the third day the exudates on the peritoneal surface contain highly vascular granulation tissue, and it is probable that the high operative death rate between the third and tenth days in part may be accounted for by absorption from the denuded granulating surfaces as well as by the extent of the peritonitis and the bad general condition of the patients.

4. This includes the cases of general peritonitis as well as those accompanied by a more localized periappendiceal exudate. According to the reports of the operations, the cases of general peritonitis were distributed as follows:

First day	No case.
Second day	One case with recovery.
Third day	Seven cases with five deaths.
Fourth day	Four cases with four deaths.
Fifth day	Six cases with five deaths.
Sixth day	Four cases with four deaths.
Seventh to tenth day	Six cases with six deaths.
Eleventh to fourteenth day	One fatal case.

Special Article

IMMUNITY.

CHAPTER XVI.—CONCLUDED FROM PAGE 1683.

If an immune animal receives an intravascular injection of the vibrio of cholera and is sacrificed shortly, the relation of the organisms to the leucocytes may be studied in stained microscopic sections of the organs (lungs). Leucocytes which have undergone phagolysis are seen to be clumped in the pulmonary vessels and in their immediate vicinity one finds many micro-organisms which have been changed into the characteristic granules by the action of the cytase which has escaped from adjacent leucocytes. Coincident with the phenomenon of phagolysis the leucocytes lose their phagocytic power, hence no bacteria are found within the leucocytes. On the other hand, all those vibrios which are remote from the leucocytes have a perfectly normal appearance. Phagolysis in the blood stream may be prevented, just as in the peritoneal cavity, by a preceding injection of bouillon. In this instance when the culture is injected no extracellular solution or transformation of the organisms into granules takes place, but as in the peritoneal cavity their destruction is accomplished entirely within the microphages. Metchnikoff holds to the correctness of these observations and interpretations, although contradictory results were obtained by Pfeiffer and his pupils. As further evidence that cytase does not exist normally in the plasma Metchnikoff cites the condition which is found in the anterior chamber of the eye in immune animals. The vibrios continue unaffected in the aqueous humor until such a time as leucocytes wander in, when they are destroyed by phagocytosis. Hence cytase does not exist in the aqueous humor, and if not in the aqueous humor it is surely absent also from the plasma; for if present in the plasma it would reach the anterior chamber by a process of diffusion. Similar conditions prevail in edematous fluids. In another instance a portion of a vein, filled with blood, was resected and centrifugated without the formation of a clot (absence of phagolysis); the plasma contained no cytase. Also Gengou collected and centrifugated blood in tubes which were coated with paraffin, and thus avoided clotting; here also cytase was absent from the plasma.

Intravascular Phagocytosis and Phagolysis.

Microcytase is Intracellular.

It would seem, then, that two important antibacterial factors characterize immunity to cholera and similar infections: the development of specific fixators, and a greatly increased phagocytic power on the part of the leucocytes. Metchnikoff leans to the view that bacteria, having absorbed fixators, are more readily phagocytized, but no clear idea is given as to the change which the fixators produce. However, he would not refer the increased phagocytic power entirely to the influence of the fixators. He believes that the leucocytes of the immune animal have *per se* a higher phagocytic power than those of the normal animal. In anthrax, for example, the phagocytic power is heightened in spite of the fact that there is no increase in specific fixators. This view, however, is opposed by Denys and Leclef, who found that the leucocytes of the immune animal, when transferred to normal serum, had no greater phagocytic power than normal leucocytes.

Increase of Fixators and of Phagocytic Power.

Metchnikoff believes that fixators, like cytase, are produced by the microphage. That the lymphoid organs may form certain fixators seems probable from the observations of Pfeiffer and Marx in regard to cholera and Wassermann and Takaki in typhoid. During the process of immunization and at a time when amboceptors were absent from the serum they could be demonstrated in the blood-forming organs (spleen, lymph glands, bone-marrow). Metchnikoff suggests that they may be produced in these organs by the microphages which have wandered in after having englobed the micro-organisms. In contrast to cytase

Fixators Product of Microphage.

the fixators readily abandon the leucocytes which produced them and become a constituent of the plasma.

The leucocytes have also been brought in relationship to antitoxic immunity and the formation of antitoxins. In experimental tetanus exudates which are rich in leucocytes contain more toxin than does a similar quantity of blood. That is to say, the leucocytes have the power of absorbing toxins, and the natural immunity of the animal depends on the degree to which this power is present. The immunity of the chicken to tetanus depends not on non-susceptible nerve cells nor on the presence of natural antitoxin, but on the absorbing power of the leucocytes for the toxin. Not only do leucocytes absorb toxins, but it is held that they also are the producers of antitoxins. As compared with the side-chain theory it is a peculiarity of the view of Metchnikoff that antitoxin does not represent a constituent of the tissue cells, but rather the toxin itself, which has been altered by leucocytic activity in a manner as yet obscure.

Natural Antitoxic Immunity.

In passive antitoxic immunity the idea of a chemical union between toxin and antitoxin does not meet with general acceptance among the upholders of the phagocytic theory. It is sometimes said that antitoxins are efficacious from the fact that they stimulate phagocytosis (absorption) of the toxin, the latter then suffering disintegration in the leucocytes.

Passive Antitoxic Immunity.

The following statements summarize the phagocytic theory of immunity as conceived by Metchnikoff:

Summary.

1. Natural antibacterial immunity depends on and is coextensive with phagocytosis and subsequent digestion of the microbes. The intraleucocytic destruction of the micro-organisms is accomplished by the cytase, possibly aided by intraleucocytic fixators. Normal serum is devoid of both fixators and cytase.

2. Acquired antibacterial immunity depends on the establishment of a heightened phagocytic power as the result of immunization or infection. In diseases like anthrax, in which fixators are not increased, this new power is an acquired property of the leucocytes and is independent of any influence on the part of the serum. In diseases like cholera, the new fixators which are formed may render the micro-organisms more susceptible to phagocytosis, but this is probably secondary to increased function on the part of the phagocytes. Both cytase and fixator are produced by the phagocytic cells. In acquired active immunity to bacteria the fixators may be free in the serum plasma, but the cytase is intracellular. In all cases cytase becomes extracellular only as the result of phagolysis.

3. In passive antibacterial immunity, as when an antibacterial serum is injected for the sake of prophylaxis or cure, the serum is efficacious chiefly because it stimulates the leucocytes to increased phagocytosis.

4. Natural antitoxic immunity depends on the power of the leucocytes, and perhaps the generative organs, to absorb the toxin.

5. Active antitoxin immunity is established through the activity of the leucocytes, by which the toxin is probably so changed as to constitute antitoxin.

6. In passive antitoxic immunity the antitoxin presumably acts by stimulating the phagocytes to an increased absorption of the toxin.

Many investigators are carrying on work in regard to phagocytosis and the properties of serums from a point of view which is entirely unbiased. From sources of this nature discoveries of recent date indicate that phagocytosis of micro-organisms by the leucocytes is impossible without the aid of some property in the serum. It seems that these substances, which the discoverers, Wright and Douglas, call opsonins, act directly on the bacteria, and that there is no reason to suppose that their virtue lies in a stimulation of the phagocytes themselves. The facts which permit of this deduction are the following: 1. When the fresh defibrinated blood of some animal is mixed with the culture of a suitable micro-organism (staphylococcus, streptococcus, anthrax bacillus, etc.) and placed in the thermostat for 20 to 30 minutes, stained preparations of the mixture show that the polymorphonuclear leucocytes contain a large number of the microbes. 2. If, however, all the serum is washed from the blood before adding the micro-organisms practically no bacteria are ingested. This shows the importance of the serum, but does not differentiate between some effect on the leucocytes on the one hand or the bacteria on the other. 3. In order to decide this point one may subject the suspension of bacteria to the action of fresh cell-free serum, and after a contact of about 30 minutes remove all the serum by centrifugation, and mix the "sensitized" culture with serum-free blood; phagocytosis occurs almost to the same degree as when the fresh defibrinated blood containing serum is used. These results seem to show definitely that phagocytosis depends on the power of the opsonins to affect the bacteria in some peculiar manner. Opsonins are very susceptible to heat, and, like complement, disappear spontaneously from the serum in a short time. Hektoen and Ruediger, and Bulloch and Atkin have confirmed the observations of Wright and Douglas and the former have added facts of importance. It seems that opsonin has a structure like that of toxin, i. e., a haptophorous and an opsoniferous group; "by heating sensitized bacteria the opsoniferous group appears to be destroyed, but the inactive opsonin (opsonoid) by saturating the receptors of the bacteria prevents further sensitization by fresh serum" (Hektoen and Ruediger). Various salt solutions neutralize the opsonins. Opsonins will be brought in still more important relationship to phagocytosis if it can be shown definitely that they are increased as the result of immunization or infection.

Opsonins.

(*To be continued.*)

Clinical Reports

RENAL CALCULUS.

UNUSUAL SIZE, VOLUNTARILY EXPELLED.

W. H. AXTELL, M.D.,
Surgeon Northern Pacific Railway.
BELLINGHAM, WASH.

Patient.—Mrs. A., aged 22, married, with one child 14 months old, is anemic, has had no illness since childhood, but suffers from dysmenorrhea, which she has had since the beginning of menstruation.

History of Illness.—The latter part of November, 1904, she had a severe attack of cramps, which lasted three or four days, the exact cause or nature of which was not determined. Two weeks previous to the present attack she had a similar attack, severe in character.

The present illness began suddenly Jan. 7, 1905, with a sharp, spasmodic, colicky pain in the right side, with nausea and vomiting. January 8, the pain became so excruciating that she fell in collapse. I found her in a condition of profound shock. She was pulseless at the wrist and the heart sounds were very indistinct; temperature, 95.8, skin moist with cold, clammy perspiration; semi-delirious. Three-quarters of a grain of morphin given hypodermically gave very little relief. She was removed to the hospital.

Examination.—January 9, examination revealed pronounced tympanitis, with tenderness on pressure on right side, extending from the margin of the rib to the right groin; the pain radiated from a point over the right kidney toward the bladder. The point of greatest tenderness and distension was in the region of the right kidney and of the gall bladder. The great distension of the abdomen and the severe pain made a thorough examination impossible. Pulse and temperature varied, with the movement of the stone and the severity of the pain.

Diagnosis.—Renal colic.

Course of the Disease.—The amount of urine passed was scant and concentrated. Examination, microscopically, showed no pus or blood but a great abundance of uric acid crystals. There was no albumin, but the urine solidified on making the nitric acid test. Nitrate of urea crystallized immediately on

coming in contact with nitric acid. Heat did not alter the urine.

On the third day, and on the days following, the bowels were abundantly moved; the pain became less excruciating and the tympanitis subsided entirely. Examination on the fifth day revealed a distended right kidney and ureter. The ureter was tender and distended from the kidney to a point on a direct line with the umbilicus; this condition was more marked on the sixth day. The distension of the ureter was above the calculus.

Up to the seventh day, the day of the passage of the stone, the amount of the twenty-four hours' urine was only from twenty-five to thirty-six ounces. Preliminary to operation on the afternoon of the seventh day, the bladder was thoroughly irrigated, and, a short time afterward, in passing the warm irrigation water, the calculus was voided in the vessel. The relaxing effect of the warm water no doubt released the stone from the ureter. The dimensions of the stone are: long circumference, ⅞ inch; short, ¾ inch; weight, 8 grains. With the passing of the calculus, the high temperature, severe pain and high pulse dropped below normal before morning.

The woman was discharged from the hospital three days after the expulsion of the stone.

Remarks.—The particular points of interest in this case are: 1. The low temperature and extreme shock. 2. The unusual size of the calculus to be voided voluntarily. 3. The stone after leaving the pelvis of the kidney completely obstructed the ureter; the accumulation of the urine above it gave a definite outline of the ureter and showed the approximate location of the stone. 4. The roughness of the stone and its large size did not produce hematuria. 5. Entire absence of pus. 6. The unusual feature of the almost complete crystallization of the urine in testing it with nitric acid.

I am indebted to Miss Ella Wilkinson, head nurse of St. Luke's Hospital, for reviewing this report.

EPILEPSY OF SYPHILITIC ORIGIN.*

JOHN T. MOORE, M.D.

Associate in Clinical Medicine and Lecturer on Mental and Nervous Diseases, Medical Department University of Texas.

GALVESTON, TEXAS.

This patient was admitted to the nervous service of the John Sealy Hospital Dec. 28, 1904. The case presented a number of interesting features.

Patient.—J. S., male, white, widower, aged 35; is a dairyman and general laborer. He uses alcohol moderately, has no drug habits, but chews and smokes tobacco; his sanitary surroundings are fair; he takes plenty of time in eating and has a good appetie.

History.—His father and mother are living and in good health; one brother was poisoned, other brother and a sister are in good health, except that one of them has "liver trouble" of some kind. The patient has had measles and pneumonia. He says he received an injury over the right eye about five and a half years ago which "mashed in" the skull slightly. His physician called it a fracture of the skull. He had an attack of a similar nature to this one about three years ago, a second one a month later, and then a third attack about one year after the first. He has been well otherwise, and denies syphilis.

Present Disease.—The patient says that he was taken sick by suddenly fainting or losing consciousness, during which attacks he bit his tongue. He says that he regained consciousness in about two hours after each attack begun.

Examination.—He is a large, muscular man, with fair complexion, red hair and scanty beard, slightly pale, but very well nourished. His expression is dull and listless, and he sits for a long time without saying a word. There is a linear scar over the right eye, about 4 or 5 cm. long, running into the eyebrow, and said to have been received from a blow on the head. Arteries are sclerosed, heart, lungs and abdominal organs are apparently normal; tibia is slightly roughened, and the supratrochlear, cervical and inguinal glands are easily felt. Pricking with a pin showed blunted sensation, but no areas of anesthesia. Patellar reflexes were diminished. Pupils reacted to light and distance. Gait is normal. Grip in both hands is weak.

Treatment.—A diagnosis of epilepsy of a grand mal type was made, and, owing to the slight roughening of tibia, he was put on saturated solution of potassium iodid, m. xv, three times a day, the dose to be increased 1 minim daily.

Course of the Disease.—January 5 he had an attack, but no note of its character was made.

January 6: The following note was made: Patient complains of great headache and sleeplessness; convulsions come on at irregular intervals. He says that he begins to feel dull about the head a short time before convulsion. He is very dull, taking but little interest in what is going on in the ward. Patellar reflexes are increased. Pupils react to light and distance. He stands poorly, and the grip in both hands is weak; his intelligence is poor, and he answers slowly. He recognizes position of limbs and body in space, but is slow to feel pricks of pins. There are no areas of anesthesia or of hyperesthesia. There is no paralysis.

January 9: The patient had seven severe attacks that were recorded. These continued during January 10, being partly controlled by chloroform and amyl nitrite.

January 11: The nurse recorded fifteen attacks from 4 a. m. to 7 a. m., and the following note was made: Patient is having very hard convulsions, somewhat Jacksonian in type, though there is no constancy of onset. Convulsions come on in right side of face and pass to right arm, left arm, whole face and lower jaw and then to legs and entire body. Eyes are directed to the right, axis parallel. Spasms are both clonic and tonic in character; they begin as tonic spasms as a rule.

The convulsions continued to grow more frequent and severe notwithstanding administration of the bromids and chloral and occasionally morphia and antipyrin. Chloroform was used to modify the convulsions. Owing to the comatose condition of the patient it became necessary to feed him through the nostril by tube.

Drs. Thompson and Dudgeon were consulted with reference to operative interference, but it was decided that the symptoms were too indefinite, though there was a history of an injury.

January 12: The patient had a severe convulsion at 2 p. m. He recovered consciousness about 4 p. m. and has not had a convulsion since. On this day, he was put on 1/10 grain doses of bichlorid of mercury by hypodermic injection, and his improvement continued very rapidly to complete recovery.

Remarks.—Syphilitic epilepsy was suspected on account of the age of onset. Practically all authorities agree that epilepsy coming on during adult life, unless directly traceable to injury, should be regarded as syphilitic in character.

There is nothing distinctive about this form of epilepsy though Charcot claims that the jactitations of syphilitic epilepsy are of a peculiar character, viz., if the convulsions begin in the upper extremity, the lower is attacked only after the face. If the face is attacked, the convulsions spread to the upper and then to the lower extremity, and if they begin in the lower, they attack the upper extremity and then the face. The convulsions never occur in the order of leg, face and arm, or arm, leg and face.

It was observed in this case that the movements began in the face, next involving the upper extremities, and then the legs, finally taking the whole body. The injury received was over the right eye, while the apparent focus was on the left side. A lack of regularity in the mode of onset also led us to suspect syphilis as the cause.

The improvement on anti-syphilitic remedies fully justified the diagnosis of syphilis as the cause of the epileptic attacks.

*Reported to the University of Texas Medical Club, 1905.

Black Urine.—The *Medical Council* states that melanuria often occurs after eating damson plums. When the patient is taking ferric chlorid or nitric acid, the urine may turn black after it cools.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

SATURDAY, JUNE 10, 1905.

THE CHRONIC FORMS OF PURPURA HEMORRHAGICA.

Purpura hemorrhagica appears so generally as an acute affection, and the chronic forms are so seldom mentioned in medical literature, that we are apt to regard them as being exceedingly rare. In the most recent text-books even, the chronic forms are barely mentioned, and for extended descriptions it is necessary to consult articles in medical journals. The recent work of the French school, if we are to judge from the article of Bensaude and Rivet,[1] tends to show that the affection is far from being a complete rarity, but has been overlooked or confounded with hemophilia.

The condition is found clinically under two forms, a continuous and an intermittent. The continuous form is the rarer of the two. The subjects of this variety generally consult the physician for general weakness with gastric and intestinal disorders, and the skin lesions are often considered of minor importance, and are discovered as the result of routine examination. The patients usually give a history of having been subject for years to attacks of nosebleed or hemorrhage from the gums. Continuous observation of the patients shows that for months or years they present petechial eruptions appearing in crops and disappearing spontaneously. The severe hemorrhagic crises of acute purpura hemorrhagica are entirely lacking. The intermittent form is more common. In these cases, there is a history of crops of purpura recurring at intervals of months or even years. These attacks are quite severe and resemble closely the ordinary picture of Werlhof's disease. Between the attacks of skin eruption it is not uncommon for the patient to suffer from nosebleed or gingival hemorrhages. There is often a history of perfect health between the purpuric attacks, and it is only by questioning that one finds that nosebleed, menorrhagia, or bruising from insignificant traumata have occurred in the seemingly normal intervals. In other cases, the general health between the attacks is more or less disturbed; the patient feels weak, there is a certain degree of anemia, or the digestion is feeble and accompanied by more or less pain. In some cases, there seems to be an alternation between visceral and skin hemorrhages, the latter disappearing on the advent of visceral bleeding. The free intervals vary greatly in different cases, and a period as long as seventeen years may elapse between two purpuric attacks. It is difficult on account of the long remissions to state absolutely whether a given patient is well or not, and it is known that in some instances the disease has resulted fatally.

The diagnosis of these cases is often far from easy, especially when they are observed for short periods only. During the intervals, when local hemorrhages, as nosebleed or menorrhagia, are present it is natural to conclude that the hemorrhage is due to some local condition, and during the purpuric attack the case is apt to be regarded as one of the ordinary type of Werlhof's disease. When profuse hemorrhages occur, a diagnosis of hemophilia is often made. Chronic purpura hemorrhagica differs from this latter condition in the fact that it is not hereditary, and also in the fact that the blood coagulates more rapidly than normally under the influence of heat, and once coagulated, the normal retraction of the clot occurs.

It is difficult to explain this peculiar intermittency in the hemorrhagic tendency. The knowledge that hemorrhages accompany some disturbance in hepatic function has led to the examination of the liver in these cases for signs of hepatic insufficiency. Examination of a number of these cases for such signs, however, has been without result. The resemblance to hemorrhagic sepsis has led to bacteriologic researches, but, so far, these also have been fruitless. One form of infection has been associated with these cases not infrequently, and that is tuberculosis. It has been suggested that possibly the recurrent attacks of purpura may be associated with recurrent invasions of the body by tubercle bacilli from some usually latent hidden focus of the disease. While this may be true in some instances, and the coincidence seems worthy of attention, it seems more likely that we are dealing with an intermittent intestinal toxemia. The resemblance of this disease to scurvy, and the more marked resemblance to Henoch's purpura, and to the group of cases classed by Osler under the erythema exudativum type, together with the almost constant presence of gastrointestinal disturbances, make this seem likely. The condition is one which has so far remained unnoted in this country; it seems likely that it occurs here, and a further investigation of these interesting cases would be desirable.

1. Arch. Gén. de Méd., 1905, No. 4.

HISTORY OF THE MEDICAL DEPARTMENT OF TRANSYLVANIA UNIVERSITY.

It is of interest and of profit, in these rushing times, occasionally to pause for a survey of past events and to note how institutions and men, once prominent, fade into the indistinct and well-nigh forgotten past. The "History of the Medical Department of Transylvania University,"[1] just published, gives, for the first time, a complete sketch of one of the most interesting medical

1. The History of the Medical Department of Transylvania University. By. Dr. R. Peter. Prepared for publication by his daughter, Miss Johanna Peter, member of the Filson Club. Illustrated. Filson Club Publications No. 20. Paper. Pp. 193. Louisville, Ky.; John P. Morton & Co. 1905.

institutions in America, of which now not even the name remains. Born of the growing demand for learning in the Trans-Allegheny region and fostered by the difficulties of travel across the mountains, the little school at Lexington grew with phenomenal rapidity to a position second to none in the United States. In the thirty-nine years of its active life (1817-1857) there were 6,456 students enrolled and not less than 1,881 graduated from this, the first medical school founded in the West. The author, Dr. Peter, was for many years a member of the faculty of this remarkable institution and long survived its dissolution. In the biographical studies of his colleagues he gives an account of the rise, phenomenal growth, decline and final disruption of an institution which exercised a powerful, though transient, influence in the middle period of the Nineteenth Century.

From the long list of names we can pick out several of the ablest writers and teachers our country has produced. Samuel Brown, Edinburgh graduate and first professor of medicine, introduced vaccination into the West, and as early as 1802, when the eastern men were beginning their first experiments, had vaccinated over 500 persons with the bovine virus. Benjamin Dudley, thoroughly trained in France and England, was in the chair of surgery from the opening until 1850, when he retired full of honors to live for twenty years in peace and comfort on his beautiful estate. Dudley, while erratic in some particulars, was one of the famous surgeons of his day. Careful, conservative and eminently successful, he drew patients and students from the whole Mississippi Valley.

The bright, particular stars of this galaxy, however, were Daniel Drake and Elisha Bartlett, who held the chair of medicine in turn, though separated by a period of years in their incumbency. Drake was an enthusiastic investigator and the most popular teacher of his time; a restless spirit, he wandered all over the country, having held professorships in eleven different schools. The journals of the period are filled with his writings, and he has left as his monument one of the most important contributions ever made by an American to medicine, namely, his "Treatise on the Principal Diseases of the Interior Valley of America." Elisha Bartlett, scholar, poet, philosopher, as well as student and teacher of medicine, was connected with Transylvania during some of his best and most productive years. It was while in Lexington that he produced the work on which his fame as a medical writer principally rests. His "Fevers," published in 1842, contains a description of typhoid which is classic. With his lovable nature and his literary productions, the tributes of Holmes, Gross and Osler have made us familiar. Among others less eminent Charles Caldwell is the most striking figure. Intensely fond of polemics, his caustic tongue made him many enemies, and his "Autobiography," published after his death, is one of the most vitriolic works of the kind ever written. It is said of this book that "he used no ink, but dipped his pen alternately in wormwood and in gall."

A reversal of the economic conditions which had contributed to the founding and growth of Transylvania brought about its decline. With the development of steam navigation on the rivers, the population drifted rapidly from the interior towns to St. Louis, Cincinnati and other cities, so that in 1856 the last course of lectures was given and the famous and influential school at Lexington was closed never to be reopened.

The profession at large is indebted to the memory of Dr. Peter for the preservation of this very interesting chapter in the history of American medicine and to the Filson Club for making it available to the general reader.

EARLY DIAGNOSIS OF TUBERCULOSIS.

The one persistent note in the important addresses at the recent meeting[1] of the National Association for the Study and Prevention of Tuberculosis, in Washington, was the necessity, in the crusade against tuberculosis, for education—education not only for the public, but also for the medical profession. It was with regard to the early diagnosis of tuberculosis particularly that such authorities as Trudeau and Osler emphasized the necessity for progress among medical practitioners. The points in early diagnosis that were deemed of special importance can not but be of interest to all who recognize the value of the present movement for the eradication of the great white plague of the North. There is no one pathognomonic sign of incipient tuberculosis and no constant set of symptoms that can be depended on absolutely as indicating the presence of the disease in an early stage. The one thing necessary is for the careful practitioner to consider a number of symptoms and to recognize that the presence of even a few of them in the same individual must be considered as evidence of the existence of tuberculosis. Many of these early symptoms are, in themselves, of such slight significance that only careful attention will lead to their recognition and to the realization of their possible importance.

As pointed out in the report[2] of the committee on early diagnosis of tuberculosis, and in the discussion which followed the presentation of this report, it is in individuals of special physical constitution that tuberculosis is most likely to occur. In those who are under weight and who are lacking in normal thoracic development and in respiratory power, the presence of any suspicious symptom must be considered of significance. If such individuals have been exposed to possible contagion from tuberculosis and if they exhibit even such slight signs as beginning loss of weight with persistent dry cough, even without the presence of tubercle bacilli in the sputum, it is extremely rash to make a negative diagnosis as to tuberculosis. Patients of this kind must

1. THE JOURNAL, May 27, p. 1706; June 3, p. 1804, and June 10, p. 1874.
2. THE JOURNAL, June, 10, p. 1874.

be kept under observation until they have regained their normal weight and have lost their cough before their cases can be considered to be above suspicion. It is much better for them to have been treated, perhaps needlessly, for tuberculosis than to have been told that they were not suffering from the disease because there were no absolute pathognomonic signs, and so, perhaps, lose precious time just when it is most valuable.

It is sometimes said that disturbance of pulse and temperature must be considered as necessary for the diagnosis of an active tuberculous process. In many patients, however, it will be found that the pulse shows this disturbance only after exercise and that the temperature is elevated only at times when the patient is tired or at such periods of physical stress as during menstruation. It is considered important that advantage should be taken of times like these in order to determine how susceptible to changes of pulse and temperature the patient may be, and thus deduce the presence of some infectious element causing an instability of these usually well-balanced functions.

With regard to physical signs in the lungs, the report of the committee emphasized particularly the fact that râles may be heard with much more certainty at certain times than at others. In the early morning, râles are much more likely to be present than in the afternoon. They may be heard quite easily on damp days and yet looked for in vain on dry days. They may be heard when the patient is tired, much better, as a rule, than when he feels well. In the case of women, râles are much more likely to be present and audible during the menstrual period than at any other time. It is the knowledge of such aids to diagnosis that enables the expert to recognize the disease at a much earlier period than is possible for those who consider that a single hurried examination enables them to tell something definite with regard to the existence of incipient tuberculosis.

All the experts are agreed on the danger that inevitably follows from negative diagnoses of tuberculosis made after insufficient examination. Patients are encouraged to continue their usual mode of life when they should be taking the outdoor air and diet treatment as conscientiously as possible. More than one experienced diagnostician insisted that a single examination of the lungs in a suspicious case is never sufficient ground for a negative diagnosis and that the making of it under such circumstances invites error. Indeed, so difficult to those with most experience is the diagnosis of incipient tuberculosis in very early cases that practically all those who see many tuberculous patients at sanitariums are agreed that tuberculin constitutes a very valuable agent in making a sufficiently early diagnosis, and that in some cases a positive diagnosis can only be reached by this means. In a word, the more knowledge of the disease there is the less the assurance in reaching conclusions in early cases. While unfortunately the reassurance of the patient by a negative diagnosis seems to the inexpert almost to justify immediate decision, the serious consequences of error must emphasize the necessity for the most careful investigation of each individual case.

THE TREATMENT OF TETANUS.

So far as can be learned from the incomplete statistics available, tetanus following Fourth of July injuries is particularly virulent. The period of incubation is usually short, the attack violent, and the rate of mortality seems to be not far from 95 per cent., while the usual rate for traumatic tetanus is probably about 80 per cent. This great virulence is due apparently to the unusually favorable conditions furnished in the lacerated, necrotic, air-tight wound produced by blank cartridges, which give the bacilli the best possible opportunity for rapid and unrestricted growth, with the production of corresponding amounts of toxin. In each of the last two epidemics, the percentage of mortality has been about the same and far too high to indicate any substantial results from the treatment used. Unfortunately the more modern methods of treatment seem to have been seldom tried, the usual routine of sedatives and the subcutaneous injection of antitoxin having been generally followed. The sad inefficiency of antitoxin when so used has led to many researches, both experimental and clinical, to secure some better method of administering it, for there is no doubt that tetanus antitoxin will neutralize tetanus toxin with which it comes in contact; therefore, the problem is to bring about this contact rapidly and abundantly, and particularly where it is most needed; that is, within the motor nerve cells of the spinal cord. As an outcome of this work certain results have been obtained that have led to a method of administration of tetanus antitoxin which seems, so far, to have had a better success than any other yet used. This may be called the combined intraneural and intraspinal antitoxic treatment. A year ago, in a special article,[1] we discussed the physiologic considerations on which it is based, and the encouraging results obtained up to that time. Since then a number of new cases have been reported with very favorable results, which indicate that through this method we can hope for, at least, some lowering of the mortality figures below the almost hope-destroying point at which they now stand.

In practice the method is as follows: The patient is anesthetized, preferably with chloroform, and an incision is made over the site of the large nerve trunks leading to the injured part, if the wound is in an extremity, as is nearly always the case. The nerves being isolated and exposed for a distance of from one to two inches, as much tetanus antitoxin as possible is injected into the substance of the nerve trunk through a fine hypodermic needle—generally from 2 to 4 c.c., in the case of a large trunk; a slight injury of the nerve fibers is rather to be desired than otherwise, as the object of the procedure is to get the antitoxin into the motor nerve fibers, along

1. THE JOURNAL, June 18, 1904, p. 1621.

which it seems to be transported into the cord. A lumbar puncture should then be made, and, after withdrawal of as much cerebrospinal fluid as is safe, generally as much as will readily flow out of the needle, for it seems to contain much toxin, from 3 to 10 c.c. of antitoxin is injected into the spinal canal, depending on the age of the patient. In addition to this, it is well to inject an additional 10 to 20 c.c. of antitoxin subcutaneously, preferably near the wound or in territory supplied by nerves from the same section of the cord as the injured part. There need be no fear of giving too much antitoxin—patients have received hundreds of cubic centimeters without showing untoward effects beyond an occasional dermatitis. Schley[2] has suggested that to facilitate reinjection the wounds made in isolating the nerves be left packed lightly with gauze strips saturated with antitoxin, which is kept from escaping into the dressing by means of rubber protective. While the patient is still under the anesthetic the wound is, of course, to be thoroughly and vigorously cleaned. Tetanus-infected wounds are to be kept open to heal from the bottom, and so dressed that air may reach them after diffusing through the dressings. The injection of serum into the spinal canal, which should always be preceded by withdrawal of a few cubic centimeters of fluid, may be repeated as often as every six to twelve hours during the first forty-eight hours, and the intraneural injections should be repeated at least once again after twelve or more hours, as also should the subcutaneous injections. Administration of chloroform for the purpose of making these frequent injections has a decidedly beneficial effect, not only affording the patient a rest from the spasms, but also lessening their violence and frequency for some time afterward.

Tetanus antitoxin, at the best, does not produce effects rapidly, and the symptomatic treatment of each case is not altered in the least by its use. The spasms must be kept down, if possible, to prevent death from exhaustion or asphyxia. In addition to the usual use of chloral and morphin as sedatives, more vigorous measures may well be taken. When the violence of the spasms threatens asphyxia, chloroform is always indicated. Intraspinal injection of eucain and morphin, as advocated by Murphy,[3] is a highly rational procedure and may be performed at the same time as the antitoxin injection without complicating the treatment. Curare, first suggested by Claude Bernard, has been used successfully both experimentally and practically in von Leyden's clinic[4] and is the most powerful of all agents in controlling the spasms, although without influence on the course of the disease. S. A. Mathews has suggested the intravenous injection of a calcium containing salt solution, the formula of which has been published in THE JOURNAL,[5] which also has the effect of reducing the muscular spasm as well as improving elimination. This is especially to be urged as a method always available to practitioners who are so situated as to be unable to secure antitoxin promptly.

Tetanus is fortunately so uncommon a disease that no one person is able to acquire an extended experience with its course and treatment; hence, we must rely on what can be learned by compiling and studying the reports of as many isolated cases as possible. By this means has been reached the conclusion that the treatment of tetanus by subcutaneous injection of antitoxin adds a slight improvement to the usual sedative measures, but by no means enough to warrant us in resting content with its results.

Of the various other methods suggested, the combined intraneural and intraspinal injections have, so far, furnished the best results, and this method is based on the soundest experimental and clinical basis, for which reasons we have ventured to urge its application in all cases of tetanus. It is extremely important that case records of tetanus patients, whether recovering or not, be reported, in order to add to our scanty information on the subject, and especially so when a new method of treatment is tried. Only by collecting many such scattered reports can a basis for future improvement be obtained.

2. Med. Rec., Oct. 15, 1904.
3. THE JOURNAL, Aug. 13, 1904.
4. Therapie der Gegenwart, vol. xlv, No. 9.
5. THE JOURNAL, Aug. 29, 1903, p. 565.

AMENORRHEA AND SYSTEMIC DISEASE.

It is usually considered that amenorrhea, especially if it asserts itself after menstruation has once been thoroughly established, is due to some affection of the genital tract. As a matter of fact, however, the cessation is more likely to be the consequence of some systemic disease. The cessation of the menses in young women may be the first signs of tuberculosis, when there is otherwise little general disturbance of the health. As a matter of fact, menstruation and the menstrual period in women present conditions, modifications of which in various ways point more often to an active tuberculous process in the system than almost any other set of symptoms. Recently it has been noted that chlorosis is reported much less frequently than used to be the case, and there would seem to be a lessening of the prevalence of this blood affection in America. It has been suggested, however, that the apparent diminution of chlorosis is really due to the earlier recognition of tuberculosis than formerly. The two affections present a similar blood picture at the beginning, and the treatment—fresh air and abundant diet, with care of the bowels—is the same for both. It is more favorable to find tuberculosis present than severe chlorosis, since genuine cases of chlorosis are likely to be associated with defects in the blood-making organs, or with abnormally small size of the heart and arteries, conditions which are hopeless of treatment.

Certain nutritional disturbances consequent on a marked change in the habits of life of the individual are often followed by a cessation of the menses. This is especially true when young women move from the country

into the city, and as a consequence have much less outdoor air than before, and usually, also, much less nutritious food. Most immigrants present a period during the first year of their sojourn in America during which their menses are irregular, if not entirely absent. This, too, would seem to be a result of the disturbance of the blood-making function, consequent on a lessened amount of fresh air. Sir Andrew Clarke used to insist, however, that chlorotic conditions, associated with amenorrhea, are more often the result of chronic constipation or of insufficient evacuation of the bowels—two quite distinct conditions—than of any other single cause. Certain it is that most of the country girls who come to the city, as well as most of the foreigners who come to this country, are apt to suffer for a time from irregularity of the bowels, and treatment of this symptom does more to bring about a return to their normal condition than any more direct remedial measures that may be considered indicated for the menstrual disturbance.

In quite recent years it has come to be realized that many of the serious nervous affections have amenorrhea as one of their preliminary or very early symptoms. This is especially true of affections of the ductless glands. When there is lack of the thyroid substance in the system, as occurs during myxedema, amenorrhea is almost the rule. In a few cases of exophthalmic goiter associated with a distinct tendency to obesity during the years between fifteen and twenty, menstruation is often scanty or is absent entirely. As a rule, during exophthalmic goiter, however, there is an increase of the menstrual flow. It is said that the cases marked by amenorrhea are usually amenable to treatment by thyroid extract. The first symptom of Addison's disease in young women is likely to be a suppression of menstruation. The lowered blood pressure consequent on the absence of the internal secretion of the suprarenal bodies somehow affects the function of the uterine mucosa so as to prevent the usual hemorrhagic exudation.

The disturbance of the function of the pituitary body associated with the enlargement of the face and the extremities, that eventually gives the clinical picture of acromegaly, is likely to have as one of its first symptoms the absence of menstruation. This occurs at a time when there are but very few signs of the disease that is developing. A certain amount of coarsening of the features may have been noticed, but even friends are not likely to consider this as evidence of a pathologic condition. Sometimes the menses are absent for several months before any pathognomonic signs of the serious nervous disease that is at work can be recognized. Amenorrhea associated with very severe headaches for which treatment is of little avail, especially if there is also some disturbance of vision, or if there is vomiting, without cause, must be considered suspicious, and if the features of the patient are heavier than normal, then the development of a tumor of the hypophysis must be considered as one of the possibilities in the case.

INNOVATION IN MEDICAL SOCIETY WORK.

The American Gynecological Society, at its recent meeting, introduced an innovation which is worthy of adoption by other societies. Authors were allowed to read only full abstracts of their papers, limited to twelve to fifteen minutes, according to the nature of the subjects discussed, although the complete papers, which, in some instances, were twice as long as the abstracts, were handed to the secretary for publication in full in the annual volume of transactions. Such a reading inaugurated each discussion, and the member whose ideas were thus succinctly set before his associates took part in the discussion and closed it. By this method the ideas of the individual members were more intelligently presented than if they had read their complete papers. The time of the society is economized, full debate is encouraged, and at the same time the members have the advantage of publishing their contributions to the world in which their points are set forth to the fullest length and without time limitation. The discussions elicited by this method were not only pointed and spirited, but singularly interesting and instructive. With the inauguration of this plan, it was evident that the patience of the members was not taxed beyond the point of endurance, as is frequently the case, in listening to long, tedious introductories, statistical data, and exhaustive recitals of the work of others. On the contrary, the curtailed contributions were listened to with marked attention. The salient points in them were set forth clearly, and in no instance was clearness of expression sacrificed for the sake of brevity.

PURE VACCINE.

Dr. Anderson's article in this issue reports a very satisfactory state of affairs as regards the purity of vaccine material in this country. While the federal government can not constitutionally exercise any control over local municipal laboratories such as exist in some large cities, the benefits of its supervision in the management of the private firms engaged in the manufacture of vaccine and other organic therapeutic agents is very obvious. We would not wish to be understood as inferring that manufacturers would intentionally send out dangerous serums, etc., but the fact that one or two have been obliged to retire from business in this line shows what was needed in the way of government inspection. At present, it appears that the business is in good hands, yet the fact that with one exception there has been an improvement in the product since the inauguration of the government inspection is sufficiently significant. The public can rest easy in regard to the purity of its vaccine matter at the present time.

SANITATION AT THE ISTHMUS.

Colonel W. C. Gorgas, Chief Sanitary Officer, Isthmian Canal Zone, in *Harper's Weekly*, May 27, writes entertainingly of the sanitary work accomplished at the isthmus and of the plans for the future. The article is admirably adapted to its purpose of interesting the public in the methods of the modern educated sanitarian, but it contains many points of interest to physicians.

Colonel Gorgas compares the death rate and morbidity rate of the first year of American occupation with what is known regarding the first year of French work on the canal. He estimates (exact figures not yet being available) that the mortality during the last year has been 14.66 per 1000, while the French reported 67 per 1000 after excluding deaths occurring out of the hospitals. He describes the measures which have been adopted and which have resulted in the disappearance of yellow fever from the city of Panama; the paving and cleaning of the streets, the collection of garbage, the ditching and oiling of swampy ground in order to destroy mosquitoes, the covering of all fresh-water receptacles, and the fumigation of every house in the city to kill the infected mosquitoes. Similar work has been done along the line of the Panama Railroad. There is a quarantine system and an immigration bureau. In connection with the hospital work, there is a laboratory for the investigation of diseases, and, in all, the sanitary work furnishes employment for a thousand men. During the next year the city of Panama will receive good water and sewerage systems, and the city of Colon will be filled in with dredged material until it is raised from 12 to 15 feet above water level. In closing, Dr. Gorgas asserts that "it is not a very difficult thing to keep yellow fever out," and notes that Havana—treated in a similar way—has been free from yellow fever since 1901. He believes that we shall attain an equally good result on the isthmus. The whole article, while tentative, preliminary and popular, is hopeful and confident. The medical profession is given every reason to hope that in a short but sufficient period American medical science will achieve a similar triumph to that already won in Cuba. Until sanitary measures are perfected some ill conditions are to be anticipated, but we need not be influenced by the gloomy forebodings given to the newspapers by disappointed adventurers now returning from the isthmus.

THE UNTOWARD SYMPTOMS INCIDENT TO THE USE OF ANTITOXIN.

Nearly every one, at one time or another, has met with untoward symptoms following the use of antitoxin. As a rule, these symptoms appear in the form of more or less distressing urticarias, myalgias, arthralgias and erythemas, but occasionally there may be seen marked cyanosis, syncope and collapse. None of these cases seems to have had a fatal outcome, but the symptoms may be extremely alarming, and we may well ask what is their underlying cause. We know that the repeated injection of serum from one animal into an animal of a different species gives rise to the formation of precipitins in the serum of the injected animal. That is, if the clear serum of the injected animal is mixed with a small quantity of serum coming from an animal of the same species as that which furnished the serum for injection, the resultant mixture soon becomes turbid owing to the formation of a precipitate. It has been noticed that the untoward symptoms following the use of antitoxin frequently increase in severity with the increase in the number of injections. This fact gave rise to the suspicion that these symptoms may be dependent on the formation of precipitins in the serum of the patient. The supporters of this theory believe that the reaction between the horse serum and the patient's serum gives rise to the formation of emboli which occlude the finer capillaries and thus produce the accidents incident to the use of these sera. The researches of Hamburger and Moro, Arthus, Francioni, Rovere and others point toward the correctness of this theory. Hamburger and Moro were among the first who showed that a precipitate is formed, *in vitro,* when antitoxin is mixed with the serum furnished by a patient who has had urticaria or other symptoms due to the injection of antitoxin. In one case, for instance, they obtained no reaction with the serum taken on the third day after the injection of antitoxin. On the fourteenth day the patient developed a severe urticaria and for forty-eight hours after the appearance of this eruption the patient's serum gave a distinct precipitate with horse serum. Francioni found that the accidents following the use of antitoxin are always accompanied by the formation of precipitins in the patient's serum, but the latter may be present in small amount without producing symptoms. Arthus showed that although horse serum is not toxic for rabbits, repeated subcutaneous injections produce local disturbances of gradually increasing severity. After the first few injections, all further injections produced marked swelling and localized gangrene. Rovere[1] has recently taken up this problem and came to the same conclusions as the earlier investigators. He studied twenty cases and got a positive reaction in three. These three patients had developed an extensive urticaria and were the only ones in his series that had distressing symptoms. Three patients whose serum gave negative results had a very slight urticaria, and Rovere believes that here, too, the precipitins may have been present, but in too small amounts to be detected. In one of the patients who developed an extensive urticaria and in whose serum precipitins were demonstrated, a marked local reaction was noticed. Two subsequent injections into this patient gave rise to a more severe local reaction than the first. This would seem to corroborate Arthus' work on rabbits. It would seem from these experiments that the accidents following the use of antitoxin are in some way associated with the formation of precipitins in the serum of the patient. It must be mentioned, however, that this explanation makes it difficult to understand why these symptoms, if due to embolism, are of such an evanescent nature.

Medical News

ILLINOIS.

Trolley Day Successful.—Hospital trolley day at Galesburg, when the street car receipts were turned over to the hospital fund, netted nearly $1,200 to the institution.

To Save Babies.—The State Board of Health has issued a circular for the guidance of mothers, instructing them as to the best methods of feeding and caring for infants, and giving simple and explicit directions as to the methods to be adopted during the summer months which are so full of peril to infant life.

Nurses' Bill Vetoed.—Governor Deneen has vetoed the bill for an act to establish a state board of examiners of regis-

1. Arch. Gén. de Méd., Feb. 7, 1905.

tered nurses. An analysis of the veto shows that the bill conferred special privileges on graduates of certain training schools, and that hardships were imposed on many well qualified and experienced nurses now in practice.

Personal.—Dr. Frank H. Norbury, Jacksonville, has been elected professor of nervous and mental diseases in Keokuk Medical College.——Dr. H. H. Fletcher, North Henderson, who is now in London, will sail for home June 16.——Dr. Edwin M. Minnick, Bradford, returned from Vienna May 20.——Dr. John C. Corbas, Jr., has been appointed local surgeon at Mendota for the C., M. & St. P. Ry.——Dr. John A. Davis, Farmer City, tripped over a low wire fence June 1 and fell, breaking an arm and dislocating a wrist.

Chicago.

Personal.—Dr. Casey A. Wood sailed for Europe June 9 from Montreal on the *Victorian*.——Dr. Frank E. Pierce has been appointed surgeon of the Indiana Harbor Railroad Company.

Concerts for Charity.—On June 3 Creatore's band gave a concert in behalf of the new Columbus Hospital. The receipts exceeded $3,000.——An entertainment given May 28 for the benefit of St. Mary of Nazareth Hospital netted about $2,500 for the institution.

The Week's Deaths.—The total deaths from all causes for the week ended June 3 were 467, equivalent to an annual death rate of 12.22 per 1,000. Heart diseases led the chief death causes with 59, followed by pneumonia with 49, consumption with 47, and violence with 45.

Physicians' Club Annual.—At the annual meeting of the Physicians' Club of Chicago, May 23, it was announced that the membership list was full and that there were several on the waiting list. Dr. Charles Louis Mix was elected secretary, and Drs. Clarence A. Earle, Desplaines, and Henry F. Lewis and Arthur M. Corwin, were elected directors. It was decided to continue the policy of holding irregular meetings.

State University Commencement.—The twenty-third annual commencement exercises of the College of Physicians and Surgeons, the College of Medicine of the University of Illinois, were held June 6. A class of 213 was graduated, and 13 of the class were women. Four of these appear on the honor list. Rev. William A. Quayle delivered the doctorate address, and Prof. T. J. Burrill, vice-president of the University of Illinois, conferred the degrees.

May Mortality.—During May 2,180 deaths were reported, equivalent to annual death rate of 12.88 per 1,000. There were 105 fewer deaths than in May, 1904—representing a decrease of 5.2 per cent. in the annual death rate. Among the causes showing increase over May, 1904, are: Acute intestinal diseases, 7; bronchitis, 6; cancer, 4; convulsions, 8; heart disease, 50; measles, 32; nervous diseases, 29; smallpox, 6; suicide, 15; violence other than suicide, 23; whooping cough, 57. Among those showing decreases are: Apoplexy, 16; Bright's disease, 29; consumption, 19; diphtheria, 10; pneumonia, 146; scarlet fever, 8; typhoid fever, 8. Pneumonia, consumption, heart diseases and violence, in the order named, headed the list of death causes.

MARYLAND.

Baltimore.

Women Graduate.—The commencement exercises of the Woman's Medical College were held May 31. Two graduates received diplomas from Dr. J. H. Mason Knox, president of the faculty.

Personal.—Dr. S. M. Stratton, professor of experimental psychology at Johns Hopkins University, has gone to Connecticut for the summer.——Drs. Jacob H. Hartman and John N. Mackenzie are at Atlantic City.——Dr. Daniel Dunott will be resident physician at Deer Park, Md., this summer.——Dr. Melville T. Carter has returned from a health trip to Mexico. ——Dr. H. Warren Buckler will spend the early summer at Cedarhurst, L. I., and will go later to White Sulphur Springs, Va.——Dr. John Turner has been elected a member of the National Geographic Society, Washington.

Report of Hospital for Crippled Children.—The biennial report of the Hospital for the Relief of Crippled and Deformed Children shows that 1,552 patients were treated, of whom 702 were cured, 683 improved, 59 unimproved, 81 lost sight of, and 27 died. There were 2,438 free cases treated in the dispensary. For 1904 the average daily number of children treated was 44. The present indebtedness is $5,000. The hospital accommodates 60 patients (six beds being for colored children). The state gives $5,000 and the city supports 23 beds at 50 cents a day each. Four beds are endowed in perpetuity and seven annually. The summer hospital in the Blue Ridge Mountains will open June 15.

MASSACHUSETTS.

State Board Election.—The Massachusetts State Board of Health has re-elected Dr. Henry P. Walcott, Boston, chairman, and Dr. Charles Harrington, Boston, secretary.

Diphtheria.—While Boston has been singularly free from diphtheria, two weeks having passed recently with no deaths reported from that disease, Barre and Quincy have each been obliged to close school buildings in an effort to check rising epidemics.

To Investigate Nuisance.—On petition of the mayors of Chelsea and Somerville, the State Board of Health has appointed a committee consisting of Drs. Henry C. Walcott, Boston; Hiram F. Mills, Lowell; Julian A. Mead, Watertown, and John W. Bartol, Boston, to investigate the problem of the foul odors originating in the New England Gas and Coke Works in Everett.

Appointments of Medical Examiners.—Governor Douglas has made the following appointments: Dr. Silas D. Presbrey, Taunton, Bristol County; Dr. Joseph G. Pinkham, Lynn, Essex County; Dr. Francis J. Canedy, Shelburne Falls, Franklin County; Dr. William G. Kimball, Huntington, Hampshire County; Dr. Francis A. Harris, Boston, Suffolk County; Dr. Henry R. Hitchcock Hyde Park, associate examiner of Norfolk County, and Dr. George F. Thompson, Belchertown, associate examiner of Hampshire County.

Government Hits Quacks.—Medical quacks who have flourished in Boston have been hard hit by the postoffice department. In the last six months about 50 have been suppressed. The latest ones are Dr. Joseph Grady, the Dr. Collins Medical Institute, the Dr. Herrick Medical Company and Dr. L. B. Williams. The last two are said to have large branches in other cities east and west. Their mail is intercepted, stamped "fraud," and, if possible, returned to the sendees. Payment of money orders is refused and mail, where senders are unknown, goes to the dead letter office. Some of these concerns are said to be taking in $2,000 a week.

MICHIGAN.

Sanitarium Burned.—The Grand Rapids Sanitarium was destroyed by fire May 15. All the patients were removed. The property loss is estimated at $15,000.

Commencement.—Michigan College of Medicine and Surgery, Detroit, graduated a class of 24, May 19. Prof. William A. Hackett delivered the doctorate address, and Dr. Hal C. Wyman, dean of the faculty, administered the Hippocratic oath.

Ill and Injured.—Dr. Gustav Nicolai, Detroit, suffered a skull fracture and other injuries in a fall from a street car, May 19, but is slowly recovering.——Dr. Wilbur Gillett, Detroit, has been declared insane and will be taken to a private hospital for treatment.

Washtenaw County Society Election.—At the annual meeting of the Washtenaw County Medical Society, held at Ann Arbor, May 24, the following officers were elected: President, Dr. John A. Wessinger; vice-president, Dr. Roger S. Morris, and secretary-treasurer, Dr John W. Keating, all of Ann Arbor.

Personal.—Dr. George Dock, Ann Arbor, left for the Pacific coast June 1.——Dr Charles J. Sorsen, Calumet left for Europe June 6.——Dr. Christopher M. Kelly, Grand Rapids, has returned from Europe.——Dr. Clarence A. Traphagen, Armada, sailed for Europe May 20.——Dr. Edwin B. Forbes, Detroit, has been appointed a physician of Wayne County, vice Dr. Philip G. Sanderson, resigned.——Dr. Roy W. Chivers has been appointed health officer of Jackson.

MISSOURI.

Unlicensed Practitioner Fined.—In the case of the State of Missouri vs. John M. Davis, Memphis, for practicing medicine without a license, the jury found the defendant guilty and he was fined $50 and costs. He has appealed to the higher court.

Colleges Merge.—Ensworth and Central Medical College, St. Joseph, have consolidated under the name of the "Ensworth-Central Medical College." The officers of the board of trustees are: Dr. James W. Heddens, president; Dr. Thompson E. Potter, secretary; Dr. Charles R. Woodson, treasurer, and Dr. Jacob Geiger, dean.

Personal.—Dr. J. N. Barger, Darlington, has been made county physician of Gentry County, vice Dr. T. E. Graham, resigned.——Dr. Thomas H. Doyle, St. Joseph, has been appointed police commissioner of that city.——Dr William L. Whittington, St. Joseph, has been elected superintendent of the colony for epileptics and feeble-minded at Marshall, vice Dr. L. S. Thompson, resigned.——Dr. Porter E. Williams, Bunceton, has been elected superintendent of Hospital for Insane No. 1, Fulton, vice Dr. James W. Smith, resigned. Drs. J. Frank Harrison, Fulton; Edwin E. Evans, Hallsville, and W. C. Lewis of Pike County, were elected assistant physicians of the institution.——Dr. Harry S. Forgrave, St. Joseph, has been appointed local surgeon for the Rock Island System, vice Dr. Peter J. Kirschner, resigned.

St. Louis.

Hospital Dedicated.—St. Anne's Hospital, at Union and Page Avenues, was formally dedicated by Archbishop Glennon, June 3.

Successful Candidates.—Out of the 63 candidates who tried the competititve examination for interneship in the City Hospital the 32 who succeeded entered on their duties June 1.

Will Erect Medical Headquarters.—The St. Louis Medical Society will erect an auditorium on the lot adjoining the Medical Library, 3525 Pine Street, for use as assembly rooms for all the medical bodies of the city.

The Medical Department of Washington University held its graduation exercises May 25. Dr. Abraham Jacobi, New York City, delivered the commencement address on "The Modern Doctor." A class of 63 was graduated.

Personal.—Dr. Percy H. Swathen, senior assistant physician at the City Hospital, left his post June 1 for a two years' course in Vienna and Berlin.——Dr. Benjamin L. Dorsey has started for Europe.——Dr. Louis H. Behrens sailed for Europe May 31 for six months' post-graduate work.——Dr. William E. Sauer has sailed for Europe.——Dr. T. Casey Witherspoon has gone to Germany for the summer.——Dr. Eugene J. Neville has returned from a six months' trip abroad.

Appointments.—Health Commissioner Simon has submitted the following appointments for approval to the Board of Health: Assistant superintendent at the Female Hospital, Dr. M. C. Tuholske, who was senior physician at the institution last year; senior assistant physicians at the City Hospital, Drs. Thomas E. Graham, N. M. Freund, C. H. Shutt, Clarence Matlock, J. W. Shankland and J. V. Koch; at the Female Hospital, Drs. L. E. Messimore and A. H. Rohlfing and Jacob J. Singer.

City Hospital Superintendent vs. Health Commissioner.—The action of the health commissioner, Dr. J. H. Simon, in summarily dismissing the chief clerk of the City Hospital, Miss Elizabeth Rowan, without cause in the opinion of the City Hospital superintendent, Dr. John Young Brown, has caused quite a sensation. This clerk has been in service in the hospital for 11 years and has served with devotion and earnestness three superintendents. The health commissioner's only explanation for her dismissal was that the "politicians" were calling for a man for this job, and so he appointed a man, Henry Newmark, to fill the position.

NEW YORK.

Accepts Appropriation.—The directors of the Batavia Woman's Hospital have decided to accept the appropriation of $1,500 made by the legislature. The hospital will now come under the supervision of the State Board of Charities.

Against Tuberculosis Sanitarium.—Despite the efforts of the Board of Health to secure permission to locate a tuberculosis sanitarium near the town of Mamakating, the town board has decided against the project. It is said that the Board of Health will now endeavor to obtain a location in Orange County.

Personal.—Dr. Frank L. Washburn, Sherman, who was overcome by smoke during a fire last week, is seriously ill with pneumonia.——Dr. Charles A. Luce has been elected health officer of Amityville.——Dr. Henrich C. Leonhardt, North Tonawanda, who went to Porto Rico a few months ago, is seriously ill with fever at a hospital in San Juan.

Relief to State Hospitals.—The twelfth annual report of the State Charities Aid Association suggests the following improvements in state hospital management: The adoption of a plan of boarding out the harmless insane; improvement in the present unsatisfactory methods of deporting the alien insane; the employment of a dentist at every hospital for the insane; the early construction of the proposed reception hospital in New York, and the construction of a new hospital between New York and Poughkeepsie. The association also desires the employment at every hospital of a dietist who shall be a graduate of a normal domestic science school.

Druggist's Certificate in Danger.—Two of the changes in the excise law jeopardize not only the druggist's liquor tax, but also the state license to do business as a pharmacist, for one provides that whenever a liquor tax certificate of a licensed druggist or pharmacist is cancelled, such person shall, in addition to the other penalties prescribed by this act, forfeit the use of his license as such druggist or pharmacist for the term of one year, and be deprived of all rights and privileges thereunder during such period. The other bill repeals the act of 1903, which establishes a special tax stamp, which permitted druggists to sell liquor, in quantities of a pint or less, without a physician's prescription.

The Insane of the State.—The number of insane persons in New York state hospitals and licensed private asylums increased nearly 1,000 in the last year, according to a report of the State Charities Association. The total number of insane persons in state hospitals and licensed state asylums on Oct. 1, 1904, was 26,861, an increase of 927. Of this total number 25,019 were in the 14 state hospitals, not including Matteawan and Dannemara, or 832 more than in October, 1903. The system of complete control, financial and administrative, by the state commission in lunacy, which has been in operation two and a half years, is not considered the wisest method of governing these institutions.

Buffalo.

Would Placard for Meningitis.—Health Commissioner Greene is attempting to have all houses in which cerebro-spinal meningitis exists placarded. There have been several cases reported in various parts of the city.

Personal.—Dr. F. Park Lewis has been appointed a trustee of the New York State Institution for the Blind, Batavia. Dr. Lewis is at present serving as president of the board of managers.——Dr. Harvey Gaylord has been elected permanent chairman, and Dr. William Ward Plummer, secretary, of the Buffalo Medical Historical Club. Dr. Gaylord read a paper on "Johannes Müller," and Dr. Julius Ullman, a paper on "The History of the School of Salerno."——Dr. Walter Goodale has been appointed tenement house inspector for the Charity Organization Society.

Prominent in Civic Improvements.—Two Buffalo physicians deserve especial mention for the interest they are taking for the elevation and general improvement of civic matters. Dr. Ernest Wende is president of the Municipal League, which comprises among its members the best element of citizenship and has for its object the purification of municipal politics and the expurgation of municipal "graft." Dr. Matthew D. Mann is president of the Society for Beautifying Buffalo, which is doing excellent work toward improving the condition of trees and otherwise beautifying the city.

Health Report.—Health Commissoner Greene in his annual report for 1904 states that the death rate for the year was 14.31 per 1,000. The report says: "During the year there was an epidemic of typhoid fever. It was easily ascertained that the temporary condition of the water and to no other factor was this due, and that 90 per cent. occurred in families where the drinking water was not boiled." Mention is made of the scarlet fever epidemic from contaminated milk, and of measles, on account of which 36 deaths occurred in 2,349 cases. Tuberculosis continues its ravages with but slight amelioration of its mortality.

New York City.

Righteous Judgment.—A milk dealer was arrested for selling impure milk and was sentenced to five days' imprisonment in addition to a fine of $150.

The New Bellevue.—The Board of Estimate has finally approved the modified plans for the new Bellevue Hospital, which is to be built at a cost of $8,500,000.

A Low Death Rate.—The death rate for the week ended June 3 was equivalent to an annual mortality of 17.11 per 1,000. The mortality for the corresponding week of last year was 20.52 per 1,000.

Explosion in Hospital.—The explosion of a steam pipe attached to the sterilizing tank in the room adjoining the main operating room at the Presbyterian Hospital, May 29, caused considerable alarm but did little damage.

Long Island Graduates.—On June 1, 73 graduates of Long Island College Hospital, Brooklyn, received diplomas from

Dr. Joseph H. Raymond, secretary of the faculty. Dr. John A. McCorkle presided and administered the Hippocratic oath, and Borough President Littleton delivered the address to the class.

May Have to Tear Down Hospital.—The Supreme Court of Brooklyn has decided that the new addition to the scarlet fever pavilion of the Kingston Avenue Hospital, recently erected at a cost of $90,000, must be torn down, as it extends 55 feet into the street. The Board of Health has appealed from this decision.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended May 27, 888 cases of measles, with 19 deaths; 470 cases of tuberculosis, with 163 deaths; 331 cases of diphtheria, with 26 deaths; 184 cases of scarlet fever, with 15 deaths; 76 cases of cerebrospinal meningitis, with 60 deaths; 32 cases of typhoid fever, with 4 deaths, and 141 cases of varicella.

PENNSYLVANIA.

Philadelphia.

Personal.—Dr. Boardman Reed and wife sailed for Europe June 3.——Dr. and Mrs. Milton Keim and Dr. and Mrs. Milton N. Keim Jr., will sail for Europe June 15, to be absent until October.

Resident Physicians.—The following have been appointed resident physicians at the Presbyterian Hospital: Drs. William F. Guilfoyle, Jr., A. Bruce Gill, H. McC. Snyder, A. H. O'Neal, F. D. Dickson and C. J. Hunt.

For Charity.—Miss Eliza Wood has donated $10,000 to the Home of the Merciful Savior for Crippled Children to endow two beds in perpetuity. To the rector of St. Matthias' Episcopal church has been given the privilege of selecting children to occupy these beds.

Correction.—Dr. J. H. Montgomery writes that the applications for positions on the resident staff of St. Vincent's Hospital, Erie, were received until June 10, and consequently that the item regarding an appointment in that institution which appeared in THE JOURNAL of June 3 was incorrect.

Health Report.—The total number of deaths from all causes for the week numbered 450, an increase of 50 over those reported last week, and an increase of 15 over those of the corresponding week of last year. There were 130 cases of typhoid fever reported, an increase of 27 over the previous week. The principal causes of death were: Typhoid fever, 13; diphtheria, 9; tuberculosis, 69; cancer, 20; apoplexy, 21; heart disease, 45; acute respiratory diseases, 35; enteritis, 28, and Bright's disease, 35. There were 275 cases of contagious diseases reported, with 23 deaths, as compared with 209 cases and 21 deaths for the preceding week.

Dr. Forbes Honored.—At the eightieth annual commencement of Jefferson Medical College, June 2, a life-sized oil portrait of Dr. William S. Forbes, professor of anatomy in the college, was presented by the alumni and present classes of the college to the board of trustees, to be placed in the "Hall of Fame of the College." The presentation address was made by Dr. Addinell Hewson, assistant professor of anatomy in the college, and the painting was received on behalf of the board of trustees by the Hon. William Potter, president. The painting is a tribute to Dr. Forbes and a manifestation of the high admiration and esteem in which he is held by the students and profession who have come in contact with him during his long years of service in the college. It was through the efforts of Dr Forbes that the state anatomical act was instituted in this commonwealth. As a further recognition of Dr. Forbes' worth the Medical Alumni Association of the University of Pennsylvania presented him with resolutions and a silver loving-cup as a mark of their esteem, and a tribute to his efforts in the field of anatomy. The resolutions and cup were presented by Dr. George A. Piersol, professor of anatomy in the medical department of the University.

Jefferson Alumni Meeting.—At the annual meeting of the Jefferson Medical College Alumni Association, June 1, the following officers were elected: President, Dr. George B. McClellan, Philadelphia; vice presidents, Alabama, Dr. Luther L. Hill, Montgomery; Arkansas, Dr. Charles H. Cargile, Bentonville; California, Dr. Joseph C. Hearne, San Diego; Colorado, Dr. Charles D. Spivak, Denver; Connecticut, Dr. William S. Keating, South Manchester; Delaware, Dr. Joseph C. Chandler, Centerville; District of Columbia, Dr. Thomas N. Vincent, Washington; Florida, Dr. Frank P. Walker, Jacksonville; Georgia, Dr. Henry F. Harris, Atlanta; Idaho, Dr. B. Frank Jones, Idaho Falls; Illinois, Dr. Frank C. Greene, Chicago; Indiana, Dr. Thomas C. Hood, Indianapolis; Iowa, Dr. Frank T. Seybert, Council Bluffs; Kansas, Dr. W. H. Bogle, Atchison; Kentucky, Dr. George B. Sprague, Lexington; Louisiana, Dr. Thomas B. Hopkins, Lafayette; Maine, Dr. Harry S. Emery, Portland; Maryland, Dr. Seth S. Ullrich, Baltimore; Massachusetts, Dr. John J. Flynn, Pittsfield; Michigan, Dr. Daniel La Ferte, Detroit; Minnesota, Dr. George C. Barton, Minneapolis; Mississippi, Dr. John W. King, Vicksburg; Missouri, Dr. William F. Kuhn, Kansas City; Montana, Dr. Thomas J. Murray, Butte; Nebraska, Dr. Harry McClanahan, Omaha; Nevada, Dr. Clarence H. Woods, Reno; New Hampshire, Dr. James R. May, Portsmouth; New Jersey, Dr. Daniel Strock, Camden; New Mexico, Dr. William R. Tipton, Las Vegas; New York, Dr. Thomas Addis Emmet, New York City; North Carolina, Dr. Robert Lardner Gibbon, Charlotte; North Dakota, Dr. John D. Heming; Ohio, Dr. Alonzo B. Walker, Canton; Pennsylvania, Drs. Percy C. Hoskins, West Chester; George B. Kalb, Erie; James L. Rea, Jacob O. Knipe, Norristown; James Van Buskirk, Philadelphia; Lewis W. Steinbach, Philadelphia; William M. Sweet, Philadelphia; Oklahoma, Dr. George A. La Motte, Oklahoma City; Oregon, Dr. Joseph R. Wetherbee, Portland; Rhode Island, Dr. John T. Farrell, Providence; South Carolina, Dr. James R. Ware, Greenville; South Dakota, Dr. Samuel A. Brown, Sioux Falls; Tennessee, Dr. Joseph A. Crook, Jackson; Texas, Dr. Adolph Herff, San Antonio; Utah, Dr. Archiemi De Rose, Vernal; Virginia, Dr. Thomas Dudley Merrick, Richmond; Washington, Dr. Nevin D. Pontius, Seattle; West Virginia, Dr. Sylvanus S. L. Spragg, Wheeling; Wisconsin, Dr. John W. Coon, Milwaukee; Wyoming, Dr. Otto K. Snyder, Cheyenne; Hawaii, Dr. Hubert Wood; Philippine Islands, Dr. Charles M. Gandy, U. S. Army; United States Army, Lieut. Louis Brechemin, M.D., Fort Baker, Sausalito, Cal.; United States Navy, Lieut. F. Clarence Ely, Colon, Panama; United States Marine-Hospital Service, Dr. George W. Stoner, Ellis Island, N. Y.; recording secretary, Dr. Charles S. Barnes, Philadelphia; corresponding secretary, Dr. Aller G. Ellis; treasurer, Dr. Randle C. Rosenberger, and chairman of executive committee, Dr. Ward Brinton, Philadelphia.

GENERAL.

Confederation of Licensing Boards Not to Meet at Portland.—The executive council and the president of the National Confederation of State Medical Examining and Licensing Boards have decided to postpone the annual meeting, set for July 10, at Portland, Ore. A meeting will be held later, most likely during the early part of the winter. The secretary is Dr. Felix A. Larue, New Orleans.

January Health Report for the Philippine Islands.—During the month there were 677 births recorded, 343 male and 334 female, representing an annual birth rate of 32.26 per thousand. The lowest birth rate is among the Chinese, and this may be explained, in part, by the fact that very few Chinese, proportionately, are married. Seven hundred and fifty-six deaths were recorded during January; of these 685 were of residents and 71 of transients. The greatest number of deaths from any one disease was 200, from convulsion of children; pulmonary tuberculosis caused 84 deaths, and chronic diarrhea and enteritis, 38. There were 28 deaths from simple meningitis.

State and Territorial Boards of Health.—The third annual conference of the state and territorial health officers with the United States Public Health and Marine-Hospital Service convened at Washington, D. C., May 15, 1905. Twenty-two delegates, representing as many states and territories, were in attendance. The principal subjects discussed were the national control of leprosy, the methods by which typhoid fever spreads, and car sanitation. Dr. John S. Fulton, Baltimore, secretary of the Maryland State Board of Health, stated that in some municipalities officials had been discovered selling the names of persons afflicted with consumption and other diseases to firms wishing lists of persons to whom samples of medicine might be sent. Dr. Edmund Souchon, New Orleans, introduced the following resolution, which was adopted by the conference:

WHEREAS, the eradication of plague from California through the united and harmonious efforts of the United States Public Health and Marine-Hospital Service, state and local boards of health, by means of rat extermination and extensive sanitary improvements throughout the affected area, is an accomplished fact: Therefore, be it

Resolved, That this conference of the United States Public Health and Marine-Hospital Service with the state boards of health expresses its entire satisfaction with the methods used and the results obtained.

The following officers were elected for the ensuing year: President, Dr. R. H. Lewis, North Carolina; vice-president, Dr. T. G. Kennedy, Iowa; treasurer, Dr. J. A. Egan, Springfield, Ill.; secretary, Dr. John S. Fulton, Baltimore.

Honor Grand Old Gynecologist.—About 125 physicians gathered at Delmonico's, New York City, May 29, to celebrate the seventy-seventh birthday anniversary of Dr. Thomas Addis Emmet. Dr. E. C. Dudley, Chicago, was toastmaster and made the introductory address. Dr. William M. Polk, New York City, spoke of Emmet as a surgeon; Right-Reverend John Farley, archbishop of New York, responded to the toast of Emmet as a writer on subjects apart from medicine; Dr. William H. Baker, Boston, considered Emmet as a teacher; Dr. Seth C. Gordon, Portland, Maine, referred to Emmet as a medical author; Dr. George T. Harrison, New York City, paid an eloquent tribute to Emmet as a friend; Dr. Francis J. Quinlan, New York City, discoursed on Emmet as a patriot, and Sir William H. Hingston, Montreal, expressed his pleasure at being privileged to be present to do honor to Emmet, whose name was so well known in Canada and abroad. Dr. Emmet in reply, gave a brief sketch of his early experiences.

CANADA.

Baptist Medical School for Toronto.—A report appeared in one of the Toronto newspapers a few days ago which stated that there is a strong possibility of the establishment of a new medical school in Toronto in connection with the University of McMaster, a Baptist institution.

University of Toronto News.—In the year just closed 652 medical students attended lectures at the University of Toronto. Medical college and hospital matters in Toronto today, it is understood, are being carefully considered both by the general hospital management and the senate of the University of Toronto, and there is every possibility of some important announcement being made in the immediate future, as it is understood that radical changes are contemplated.

Personal.—The Hon. Dr. R. A. Pyne, minister of education for the province of Ontario, and registrar of the Ontario College of Physicians and Surgeons, and Dr. J. Algernon Temple, professor of gynecology in the University of Toronto and formerly dean of Trinity Medical College, will receive the honorary degree of LL.D. from the University of Toronto on commencement day, June 9.——Dr. George H. Field, Coburg, Ont., has returned from a trip to the hospitals of Europe.——Dr. W. A. Young, managing editor of the *Canadian Journal of Medicine and Surgery*, Toronto, is at Atlantic City.——Mr. I. H. Cameron, professor of surgery in the University of Toronto, will spend the next three months in England and will attend the annual meeting of the British Medical Association at Leicester.——Dr. Carleton Jones, chairman of the committee of arrangements of the Canadian Medical Association, which meets at Halifax on August 22, has returned from Bermuda.——Dr. Charles O'Reilly, the retiring general superintendent of the Toronto General Hospital, will be tendered a banquet by the profession in Toronto and the province of Ontario on June 10 at the Albany Club, Toronto.——Dr. C. F. Martin, Montreal, associate professor of medicine in McGill University, has returned to Montreal from Washington, D. C.——Dr. O. M. Jones, Victoria, B. C., has gone to Europe for three months.

FOREIGN.

Congress of Medical Women.—The women physicians of Russia are planning a congress to be held this year at St. Petersburg.

Prophylaxis Against Malaria in Algiers.—The French government is undertaking a systematic campaign against malaria in the army stations in Algiers this coming season.

International Conference for the Protection of Wage-earners.—Nearly all the European countries were represented at this conference held at Berne last month. Among the resolutions adopted was one prohibiting wage-earning work for women at night, and another, the use of white phosphorus in the manufacture of matches.

Imprisonment for a German Irregular.—A former fish merchant of Lüneburg, named Kurzinski, advertised and sold a remedy which he claimed to be an absolutely certain cure for tuberculosis of the lungs. This claim was regarded as an attempt to deceive the public and he has recently been condemned to six years' imprisonment. This is the second or third prosecution for similar practices.

Swiss Law Against Marriage of Imbeciles.—A Swiss law, dated in 1874, forbids the marriage of dements and imbeciles. The latter term has been found too vague, and the revised code now limits marriage to persons capable of discernment (*die sich im Zustand der Urteilsfähigkeit befinden*). The clause prohibiting the marriage of dements is maintained, but the term imbeciles has been dropped, according to a recent subeditorial in the *Semaine Médicale*.

Plague at Port Said.—A case of plague was reported from Port Said during the first week in May. Plague in this port, the Mediterranean entrance to the Suez canal, where on an average 10 vessels pass every day, is naturally regarded with apprehension, not only because of the transit trade with the canal, but because of its large bonding warehouse trade and the importance of the port as a coaling station.

Lay Editor Fined for False Report of Diphtheria Epidemic.—The courts at Kiel have recently condemned the editor of a political journal for publishing a false report that diphtheria was epidemic. The medical experts testified that the false report had not caused any appreciable sensation, but the court decided that even if there had been no general alarm from it, the news was such as to cause a certain amount of anxiety.

The Formic Acid Sensation.—A member of the party of British physicians recently visiting Paris remarks that one of the most interesting sights there was the set of curves exhibited by Professor Huchard and others, showing the increase in their energy and endurance after taking formic acid. Our French exchanges lately have been teeming with articles commending formic acid as a stimulant and tonic or else ridiculing this revival of the old extracts of ants, "water of magmananimity," etc., of the seventeenth century pharmacopeias.

Professional Secrecy.—A German physician was recently condemned to a $5 fine for violation of professional secrecy, as was mentioned in THE JOURNAL at the time, page 803. He had warned a certain family to beware of a certain relative whom he knew to be in the contagious phase of syphilis. The relative brought suit against him, and he was fined as stated. Appeal to the supreme court, however, has resulted in the reversal of the decision, the court stating that the obligation to professional secrecy is not absolute. It is outranked under certain circumstances by professional duty. In the case in question there was no violation of medical secrecy as the danger to which the third parties (to whom he was family physician) were exposed justified him in his course of warning them of the existence in their relative of a "horrid contagious disease."

French Law on Dangerous Trades.—The French legislation on indemnities for industrial accidents (1898), excluded from the benefits of the law the so-called "professional affections" almost inevitably associated with the exercise of certain trades. Time has shown, however, the *Semaine Médicale* observes, that certain accidental affections, such as syphilis among glassblowers from the use of instruments in common, and malignant pustule among tanners, have to be included among those calling for an indemnity. The only affections now excluded are those which are the slow, certain and almost fatal consequence of the practice of the trade in question. The authorities have been collecting data on this subject during the last four years, and a bill has recently been presented to the parliament bearing on the dangerous trades using lead and mercury. The *Semaine* remarks that in these trades the right of the state to interfere should be restricted to the enforcement of sanitary and other measures to guard the workmen against poisoning. When the proprietor conforms to these measures his responsibility ceases, the workman knowing that the trade he follows is a dangerous one for the health.

LONDON LETTER.

The Financial Relations Between the London Hospitals and Medical Schools.

At the annual conversazione of the Medical Society of London, Mr. Henry Morris delivered the oration for the year on a subject which has become a burning question—the financial relations between the London hospitals and the associated medical schools, and the bearing of these relations on medical education. Until the last decade the medical schools of London have been practically self-supporting, but the need for the teaching of recent extensions of science has made this no longer practicable. Two schemes have been formulated to meet the difficulty—one, a self-supporting amalgamating scheme to include the existing medical schools, and the other, an appeal to the public for funds to be applied to medical education to be administered in connection with the University of London. Referring to the instruction of the King's Hospital Fund, based on the finding of its medical school committee (which has been reported in THE JOURNAL), that none of this fund should be applied to medical education, he maintained that here were good reasons why some part of the incomes of hospitals should be devoted to the associated medical school, in view of the wishes of donors that as much good as possible should be done by means of their contributions. This idea, he held, would take in the matter of medical education,

for the sick poor benefited by the training given in the schools, not merely within the walls of the hospitals, but to a much greater extent outside. The medical schools are an integral part of the machinery for helping the poor. Moreover, if the school fees are raised so as to remunerate adequately the teachers, rich men alone could afford to enter the profession. As the supply of physicians, therefore, would be diminished, the poor would inevitably be to some extent neglected. He vigorously combatted the idea of the committee of the King's Hospital Fund that the hospitals by providing the so-called "clinical material," sufficiently requited the obligation of the schools. He hoped that those hospitals which suffered by this new regulation would at once establish separate medical school funds. At the London Hospital such a fund has already been instituted, and during the first week of its existence the sum transferred to it by supporters of the hospital was more than twice the sum ever contributed by the hospital to the school. Referring to the proposed delegation of the teaching of pure science to an institute of medical sciences, he maintained that the only teaching from which the medical schools should be relieved was that of physics, chemistry and biology, and that an examination on these subjects should be passed before the fifth year's medical curriculum was begun.

Bubonic Plague at Leith.

Bubonic plague has broken out at Leith, an important Scotch seaport town. The first case occurred in a tenement house near the docks. The patient was a laborer employed in the reconstruction of the Leith tramways; his wife worked in a rag store. He became ill a week ago, and when his condition became serious the health officer ordered his removal to an isolation ward in a hospital where he developed unmistakable symptoms of bubonic plague and died. Energetic measures have been taken to prevent the spread of the disease. The man's wife and two children and the remaining inhabitants of the tenement numbering 25 in all were removed and isolated. The hypothesis put forward as to the origin of the disease is that some affected rats were concealed in the rags imported from the East but the owners of the store where the man's wife worked say that they have not imported eastern rags for years and that it is almost impossible for rats to be concealed in the rags which as a rule are hydraulically pressed before shipment. The health officer has issued a circular to shipowners requesting that fenders be placed on all ropes connecting vessels with the quays and that all gangways be withdrawn at night in order to prevent rats gaining access to ships from the shore.

Telephones and Infectious Diseases.

From time to time scares have been raised in the lay press as to the danger of transmitting diseases by the mouthpieces of the telephones. Tuberculosis and diphtheria were particularly mentioned. In order to investigate the matter Dr. Collingridge, health officer of the city of London, removed the twelve mouthpieces from various call offices and sent them to Dr. Klein for bacteriologic examination. The latter after conducting experiments with guinea-pigs, reported that none of the mouthpieces contained either tubercle or diphtheria bacilli. Dr. Collingridge, therefore, concludes that in the use of the telephone there is no risk of acquiring infectious diseases. But he calls attention to the fact that the various public telephone offices are very badly ventilated.

Death of Dr. Dutton of the Liverpool School of Tropical Medicine.

The Liverpool School of Tropical Medicine has for the second time lost one of its most promising workers while he was engaged in one of its expeditions for the investigation of tropical diseases. It may be remembered that in 1901 Dr. Walter Myers, while studying tropical diseases, contracted yellow fever at Para and died. In his memory a Walter Myers fellowship was founded by the Liverpool school. The sad news has been received that Dr. Dutton, who was appointed to this fellowship, has suddenly died in the Congo while investigating trypanosomiasis and tick fever. In 1903, accompanied by Dr. Todd, he proceeded to the Congo. Toward the end of 1904 they were able to demonstrate independently the cause of tick fever in man—a discovery made a few weeks previously by Ross and Milne in Uganda. Further, they demonstrated the transference of the disease from man to monkeys by means of a peculiar species of tick. During the investigation they both contracted the disease. Dr. Dutton had not attained the age of 30 and yet had made a name as an investigator of tropical diseases that was famous throughout the world. His first expedition to West Africa took place in 1900, when, with Drs. Annett and Elliott of Toronto, he visited Nigeria in order to study the bionomic of the anopheles and measures for the prevention of malaria. The expedition issued two reports, one on antimalaria sanitation and the other one of the most complete monographs on filariasis published. In 1901 Dr. Dutton proceeded alone to the Gambia and drew up a most comprehensive report on the prevention of malaria. He also discovered for the first time a trypanosome in human blood. Hitherto the organism had been known only in the blood of animals. This organism was that subsequently shown to be the cause of sleeping sickness (*T. gambiense*). He also described several other trypanosomes which were new to science. In 1902 he proceeded with Dr. Todd to Senegambia and drew up a report on sanitation which was presented to the French government. He had charge of the present expedition to the Congo, which was sent out in 1903, and was accompanied by Dr. Todd and Dr. Christy. The expedition had made many valuable observations while tracing sleeping sickness along the river banks and investigated the nature of tick fever and filariasis. A most promising life and brilliant career have been cut short.

The Centenary of the Royal Medical and Chirurgical Society.

The greatest of the English medical societies has celebrated its centenary in a manner worthy of its history and position. The proceedings commenced with the admission as honorary fellows of Dr. Christian Bohr, Sir William Ramsay, Dr. Robert Barnes, and Dr. Walter Gaskell. The president, Sir Douglas Powell delivered an address in which he congratulated the society on the part of its past presidents now living, on the part of the council and himself on its completion of the hundredth year of its existence. He referred to the volume just issued by the honorary secretary, Mr. Stephen Paget, in which the chronicles of the society are most interestingly set forth and which contains a sketch of the lives of its fifty presidents by the honorary librarian, Dr. Norman Moore. These chronicles are an epitomized history of the medicine and surgery of the past century. In the first half of the century they deal with many great incidents in medicine and surgery and in the second with great developmental movements in pathology and therapeutics. Among notable achievements the president referred particularly to the papers describing Astley Cooper's ligature of the common carotid artery, Dundas' description of acute rheumatic pericarditis and endocarditis, and Abernethey's account of mitral stenosis. When the Napoleonic wars were raging the society was receiving papers from its Fellow, and later President, Sir Gilbert Blane whose introduction of lime juice for the prevention of scurvy saved more lives than were lost in all the naval battles. Sir B. Brodie in 1836 by his temperature records of a fatal case of luxation of the cervical vertebræ with destructive hemorrhage into the upper cord demonstrated what his earlier experiments of 1811 had led him to believe, and had been guessed by John Hunter, that fever was neither a mere matter of altered circulation, as the older physicians had thought, nor of oxidation as the physiologists after Lavoisier were teaching, but that it was dependent on some other controlling factor probably of nervous origin. How otherwise could be explained a rise of temperature to 112° in a man dying with respirations reduced to less than six a minute? This was the earliest instance of the use of the clinical thermometer. During Bright's presidency in 1838 Bostock read his paper on the clinical examination of the urine and initiated an important development of clinical pathology. Dr Webster's paper in 1843 on the "Brutal Treatment of the Insane" then prevailing was the forerunner of the more humane methods of Conolly. The paper by Roe and Thompson in 1835 on "Paracentesis for Empyema" was the beginning of a great advance in thoracic therapeutics. Then followed John Hutchinson on "The Spirometer," John Marshall on "The Galvanocautery," Golding-Bird and Hilton on "Operation for Internal Strangulation," in 1846-47, Kirkes on the "Detachment of Fibrinous Clots from the Interior of the Heart and Their Mixture with the Circulating Fluid," and Spencer Wells' first five cases of ovariotomy. In the second half of the century among the most important papers were Fenwick's, on the "Microscopic Examination of the Sputum," Marcet's, on the "Inoculation of Sputum in the Diagnosis of Tuberculosis," Hutchinson's, on "Vaccino-Syphilis," in 1871, and Ord's, on "Myxedema," in 1877. After the address, Professor Chin on behalf of the Medico-Chirurgical Society of Edinburgh, Mr. Langton on behalf of the Medical Society of London, Dr. Frederick Taylor on behalf of the Clinical Society, Dr. Boxall on behalf of the Obstetrical Society, and Mr. Symonds on behalf of the Laryngological Society, congratulated the Fellows of the Royal Medical and Chirurgical Society on the attainment of its centenary. The banquet which

followed was attended by a number of distinguished guests, including the Prince of Wales, Prof. Clifford Allbut, Right Hon. John Morley. A conversazione was held at the Natural History Museum and was attended by some thousands of persons. Amongst those present was Senor Manuel Garcia who, as recently reported in THE JOURNAL, has just celebrated his centenary.

Medical Plants.

At the Royal Horticultural Society a lecture illustrated by lantern slides was delivered by Mr. E. Morrell Holmes on "Medical Plants Old and New" which, in view of the celebration of the Centenary of the Royal Medical and Chirurgical Society, was both opportune and interesting. The lecturer pointed out that although horticulture must have begun at a very early period of civilzation, the plants required for medicinal use were chiefly collected from the fields and woods and were not specially cultivated, except those which, like the pomegranate and almond, afforded edible fruits, and like henna were planted for their fragrance, and like the lily for their beauty. Even in the time of the Greeks and Romans, although horticulture had made great strides and pipless apples and long grapes were known, violets and roses were found in winter, yet there is no record of distinct physic gardens. It was only in the records of monasteries, abbeys, and nunneries in the Middle Ages, that we found any mention of a physic garden or portion set apart for the cultivation of medicinal herbs, usually near the surgeon's residence and distinct from another portion of the garden, retained for culinary herbs. One of the first lists of plants cultivated in these physic gardens was given in the "Capitulary of Charlemagne." Subsequently, wealthy citizens had physic gardens, and during the reigns of the Tudors there were physic gardens under the charge of the apothecary who attended royalty. Private physic gardens were followed by municipal physic gardens, and these developed into the modern botanical gardens to which modern horticulture owes so much. Descriptive catalogues of the plants grown in these gardens and containing an account of their medicinal properties were published by their owners, and form the herbals on which domestic medical treatment was based until the early part of the last century, when a large number of medical plants described in them were omitted from the pharmacopeias, and the herbals were succeeded by more advanced work on the medicinal plants and the pharmacopeias. During the last half of the eighteenth century the growth of the population led to increased demand for medicinal plants and their preparations, and the cultivation of these was carried on on an agricultural rather than on a horticultural scale. The increasing use of quinin led to cultivation of chinchona bark on a large scale in India and Ceylon, followed by that of coca in various colonies. The lecturer also alluded to the cultivation of Indian hemp for medicinal purposes and to the ancient and more extensive cultivation of the opium poppy in various countries.

Correspondence

"Works But Not Words."

BISMARCK, N. D., June 3, 1905.

To the Editor: I failed to see Mr. Bok's letter in THE JOURNAL, May 20, 1905, until my attention was drawn to it at the meeting of the House of Delegates of our state association.

Mr. Bok complains of the apathy of individual physicians and medical societies in not appearing before legislative committees on behalf of pure-drug laws, introduced in different legislatures last winter, and states that within his own knowledge not a single physician or representative of a medical society appeared before such a committee.

While this may be true generally, it does not apply in this state to the bill introduced and passed in our legislature, prohibiting the adulteration of drugs and providing for the printing of the ingredients, in case of poisons and other dangerous substances, on the labels of proprietary medicines. My attention was first drawn to this bill when appearing before the public health committee of the House of Representatives, in opposition to a so-called pure-food bill, the effect of which would have been completely to nullify the good work that has been done for the past two years by our pure-food commissioner. I appeared by authority of the council of our state medical association and was received with courtesy by the committee. After I had presented the case on behalf of our association, my opinion was asked as to the pure-drug bill that had been introduced and also as to another pure-food bill that had been introduced in the senate. I had to reply that I had not seen either of the bills and knew nothing of their provisions, but agreed to examine them and to appear again before the committee, when it met to consider the bills, the date being fixed for the following week. I forwarded copies of the bills to the secretary of the state association, asking him to bring them before the president and other members and to use his influence in favor of their passage. I also saw some of the registered pharmacists of this city and as many of the members of the legislature as I could and pointed out the advantages of the bills and prepared myself to go before the committee. Before the time came for the committee to meet, the legislature adjourned for a week and I received no notice of the new time of meeting, but as sentiment, in the public press and among the members, was almost unanimously in favor of the proposed laws it was not necessary for me to take a more active part, and, in fact, by doing so I should probably have caused more opposition, as representatives of the patent medicine interests would have argued that physicians were supporting the bill for selfish reasons.

The credit of introducing the bills is entirely due to our energetic pure-food commissioner, Prof. E. F. Ladd of the North Dakota Agricultural College, and it was a worthy tribute to his efficiency to have members of the legislature tell me that they were satisfied that the bills were all right, as Professor Ladd was supporting them.

I do not know how it is in other states, but here it is difficult to find out when a committee is going to consider any particular bill, and in one case last winter, after the chairman of a committee had promised to give me notice when his committee would consider a bill, containing a provision allowing communities to discharge unpurified sewage into streams and rivers, and I had remained in my office for two or three mornings waiting for a notice by telephone, I was informed that the bill was passed. In this case not a single member, that I spoke to, knew of this provision in the bill, but simply accepted the report of the committee recommending that the bill pass.

I agree with Mr. Bok that it is the duty of medical associations to take an active and leading part in promoting legislation bearing on the public health, and our state association can point with pride to the fact that all the legislation that is asked for, including an almost new medical law providing for reciprocity in exchange of licenses, an anatomic law, and a law establishing a state bacteriologic laboratory—this last was vetoed by the governor on account of the appropriations exceeding the available funds—was passed. Having been a member of the legislative committee for the past ten years, I can testify that under the new system of organization the medical societies can exert more influence than formerly.

F. R. SMYTH,
Chairman Committee on Legislation and Public Policy,
North Dakota State Medical Association.

Climate in Treatment of Tuberculosis.

EL PASO, TEXAS, May 30, 1905.

To the Editor: In the proceedings of the Illinois State Medical Society meeting (THE JOURNAL, May 27, p. 1706), I notice that Dr. J. W. Pettit, Ottawa, Ill., is reported to have said, in his article on tuberculosis, that "climate is an unimportant factor in the treatment of tuberculosis," and that "it has been demonstrated that the tent is practicable in cold climates." In the same issue, in the transactions of the National Association for the Study and Prevention of Tuberculosis, Dr. William Osler is quoted as saying: "The education of the profession includes three points: 1. They must know that early recognition is the first and most important thing. 2. They must recognize, practically, the efficiency of open-air treatment. 3. They must educate medical students;

this is of paramount importance." Mr. William H. Baldwin, Washington, in a paper, at the same meeting, said: "1. Climate is not an essential, nor even the most important feature" in the treatment of tuberculosis. 2. "Necessities are fresh air, rest, nourishing food and regular habits."

The statements of Dr. Pettit and Mr. Baldwin are very frequently made. One statement made by each man is contradictory to his own statement just preceding, both making the statement that climate is unessential, and following it by immediately making open-air treatment one of the greatest essentials. Now, if open air is one of the greatest essentials, as emphasized by both of these men, and also by Dr. Osler, why does it not necessarily follow that the preferable climate is that in which the patient can get the most of this open air? If open air and sunshine are essentials, why is it not better that the patient be where he may have from 82 to 84 per cent. of possible sunshine, as is stated by the government report to occur at Phoenix and Tucson, Arizona, and El Paso, Texas, and at other points in the arid Southwest, instead of being in Chicago, with a possible sunshine of 53.6 per cent., or in New York, with a possible sunshine of 59 per cent; also why should not the patient be where there are only 37 cloudy days out of 365, as given by the government reports at the above-named points in Arizona and Texas instead of in Chicago, with 107, or New York, with 118, or St. Louis, with 117 cloudy days in the year?

Also, if being out of doors in the open air is an essential, is it not probable that the patient will be in the open air more in a climate where there is only an average mean rainfall of 7 inches a year, as at any of the above-named places in Arizona and Texas, than in Chicago, with an average mean rainfall of 30 inches, or in New York, with 42, or in Indianapolis, with 40 inches per year? Is it not probable that the patient will be in the open air more in a vicinity where there is never any snow, or only a trace, than he will be in Chicago, with an average yearly snowfall of 35 inches, or New York, with 26 inches, or Kansas City, with 31 inches?

I am glad to see emphasis laid on the point that an early diagnosis should be made; that diet and proper care are essentials in the treatment of tuberculosis; and, leaving out all arguments as to the questions of altitude, humidity, and electrical phenomena, I wish to emphasize that the location for a tuberculous patient is preferably where he may have the benefit of open air and sunshine the maximum number of hours out of the twenty-four, without exposing himself to unnecessary discomforts and inclement weather.

When this question is given some thought along these lines, I think the statement will not so frequently be made that there is nothing in climate in the treatment of tuberculosis, as my interpretation of a good climate is simply one where the patient can be out of doors most.

W. LAUNCELOT BROWN, M.D.

Cesarean Section for Placenta Prævia.

OMAHA, NEB., May 30, 1905.

To the Editor:—In Dr. Holmes' article on section for placenta prævia in THE JOURNAL, May 20, appears this assertion concerning the Catholic Church's doctrine anent extrauterine pregnancy: "The profession may not know it, but the church prohibits operation for extrauterine pregnancy; this prohibition would not be countenanced by physicians."

I do not suppose for a moment that the writer intends the latter part of this assertion for Catholic physicians who look on that church as their teacher and guide in questions of faith and morals; and as there is a moral principle involved in this, as well as in kindred operations, they must, if true to their religious belief, follow the wise decisions of the church.

But apart from this, and not in a spirit of controversy, let me ask is not Dr. Holmes' statement, "The church prohibits operation for extrauterine pregnancy," somewhat misleading, put forth, as it is, in such general terms? Is it altogether true? The words of the church in deciding the case will answer the question so plainly that he who runs may read.

The court's decision, given on the fourth of May, 1898, is as follows: "In a case of necessity, laparotomy and Cesarean section are allowable in extrauterine pregnancy, or in ectopic conception, on condition that, as much as can be, the lives of the fetus and of the mother are carefully considered and protected."

In face of this pronouncement, the alleged statement of Dr. Holmes is not correct. The church does prohibit every kind of operation before the period of viability, otherwise the life of the fetus would not be carefully protected, a life that in the eyes of the church is as valuable and sacred as that of the mother. So, too, is the induction of premature labor either in intrauterine or extrauterine pregnancy regarded by the church as not only lawful but meritorious on the part of the physician when the child is viable; and this, too, whether the necessity arises from contraction of the pelvis, from tumors contracting its cavity, from abnormal size of the child, from death of the fetus, from diseases of the mother dependent on pregnancy or aggravated by it, and threatening the mother's life.

This is the doctrine of the Catholic Church. She condemns any action or operation that has for its object or aims at the destruction of the fetus for the safety of the mother. She holds that the infant within the womb has an inalienable right to life as much as the infant on its mother's lap, as much as the mother herself, and, therefore, in her teaching regarding operations, does she forbid strongly any and all that tend directly to destroy the life of the fetus.

W. P. WHELAN,
Professor of Medical Jurisprudence,
Creighton Medical College.

A Section on Tropical Diseases.

PHILADELPHIA, June 1, 1905.

To the Editor:—The Section on Tropical Diseases of the British Medical Association, organized a few years ago through the efforts of Dr. Sandwith of Cairo, has proved a noteworthy success. The meetings have been largely attended and the discussions have excited wide interest among the members of the association who represent the medicine of Great Britain in the tropical outposts and those at home. The subjects selected for the successive meetings have been of very general interest. This year they are as follows: For the first day, "Tick Fever"; second, "Sprue and Hill Diarrhea"; for the third, "Tropical Diseases of the Skin."

While our national interests in the tropics are of comparatively recent date and much less extended than those of Great Britain, they are sufficiently important to make it in the highest degree desirable that a section on tropical diseases should be organized in connection with the American Medical Association, and this I earnestly hope will be done at the coming session. This suggestion is based chiefly on the obvious necessity for a common ground in which matters relating to tropical medicine may be discussed at the sessions.

The subjects directly related to tropical medicine fall chiefly under the heads of pathology and bacteriology, practice of medicine, cutaneous medicine and public and personal hygiene. Yet papers on these subjects from the standpoint of practitioners having experience in the tropics, on the one hand, and of those looking forward to medical work in tropical climates, on the other hand, if read in existing sections would occupy time which a majority of those present could utilize in more congenial work, while if read in a special section they could not fail to attract a body of interested men which would become larger from year to year, as the scope and purpose of such a section become more evident.

Courses on tropical diseases, which have been delivered in the Jefferson Medical College, first by Captain Kiefer and later by Major McCall, have been highly successful. Attendance has been voluntary and there were no examinations, but the interest manifested by the students was remarkable and many practitioners availed themselves of the opportunity of being present.

It is to be hoped that this matter will be thoroughly considered by the House of Delegates. J. C. WILSON.

Proposed American Medical Insurance Company.

FORT WAYNE, IND., June 1, 1905.

To the Editor:—In view of the approaching meeting of the American Medical Association, I wish to make a suggestion in regard to the relief of the "wounded soldiers of the war"—that is, those of our profession who, through age, illness, accident or other not discreditable cause, have been reduced to exiguous circumstances at the closing of their careers.

Probably the best way by which this philanthropic purpose can be accomplished is by the organization of an American medical insurance company. We note many large companies handling vast sums of money and making immense profits. If members of the Association were generally interested in an insurance company of their own they could make it a great success, as they have accumulated a great fund of valuable experience relating to insurance matters. Part of the profits of the company might be used in paying small annuities to the objects of this benevolent enterprise. The company would also provide moderately costly insurance rates and favorable options for members, and would, of course, accept business outside of the profession. It would be able to secure best actuarial and managing talent, and all physicians would be interested in making it a success. W. P. WHERY, M.D.

Association News

The Portland Session.

Attention is called to the fact that the last issue of THE JOURNAL, June 3, contained nineteen pages devoted to the Portland session, the attractions en route, the railroad rates, routes, trains, the hotels, meeting places, etc., with sixteen illustrations. Additional information will be published in this department from week to week. We repeat the reminder that reservations on trains and hotel accommodations in Portland should be secured now.

Chicago Medical Society Special.

Reservations on this train may be made through Drs. A. E. Halstead, 103 State St., or M. L. Harris, 100 State St., in addition to Dr. F. X. Walls, 103 State St., and Mr. C. A. Matthews, 208 S. Clark St., all of Chicago. The train leaves Thursday, July 6, at 7:30 p. m. and reaches Portland Monday, July 10, at 8 a. m.

Welcome to Spokane on the Portland Trip.

SPOKANE, WASH., June 1, 1905.

To the Editor:—The Spokane County Medical Society extends a cordial invitation to physicians to stop off at Spokane, either going to or returning from the Portland session. We will provide entertainment for all who come. We want you to see our beautiful city. Write or wire date, time you can spend in Spokane and number in party.

WILLIAM L. HALL, Secretary,
209 Empire State Building, Spokane, Wash.

Welcome to Portland.

The Portland (Ore.) City and County Medical Society will take the greatest interest in making pleasant the visit of the physicians from other parts of the United States. At the annual meeting, just held, Dr. Henry Waldo Coe, editor of the *Medical Sentinel*, was elected president. The society feels that this is an important year for it, as it will have charge of one of the most important social functions of the session of the American Medical Association. Dr. Coe has appointed committees that will act with the local Committee of Arrangements.

Cordial Greeting from the Seattle Profession.

SEATTLE, WASH., May 29, 1905.

To the Editor:—The medical profession of Seattle is anxious to extend all possible courtesies to the members of the American Medical Association and their families either on their way to the Portland session or returning therefrom. It will be our endeavor to make their stay in our city, whether it be lengthy or brief, as pleasant and interesting as the time will permit.

That we may be enabled to afford our visitors such attention as we desire it will be necessary for the secretaries, chairmen or managers of parties to notify us as soon as possible of: 1. The date of arrival in Seattle. 2. The length of time to be spent in Seattle. 3. The number in the party. 4. The number of ladies.

If those in charge of parties will advise us on these points it will be our pleasure to extend to them a most cordial welcome.

J. H. LYONS,
President of King County Medical Society.

Excursion to Los Angeles—Pennsylvania Alumni Reunion.

LOS ANGELES, CAL., June 1, 1905.

To the Editor:—The Alumni Association of the University of Pennsylvania of the Pacific Southwest will give to visiting alumni a reunion and banquet at the California Club, Los Angeles, Cal., on the evening of July 25, 1905. This date was chosen because there will be an excursion to members of the American Medical Association from Portland, reaching Los Angeles July 24, and it is hoped that as many as can will avail themselves of the opportunity to meet their classmates of former years. It is intended to have present as guests Drs. John A. Musser, and Vice Provost Edgar F. Smith of the University of Pennsylvania, besides other notable men, who will give addresses. It is expected of alumni that they will co-operate in order to make this a grand success. Charge per plate will probably be five dollars.

Kindly address the undersigned for further particulars.

C. G. STIVERS, M.D.,
Secretary University Pennsylvania Alumni Association of the Pacific Southwest.

NEW MEMBERS.

List of new members of the American Medical Association during the month of May, 1905:

ALABAMA.

Baker, J. N., Montgomery.
Dennis, D. R., Arley.
Frazer, T. H., Mobile.
Glass, E. T., Birmingham.
Huey, T. F., West Blocton.
Lusk, P. B., Guntersville.

ARIZONA.

Caven, C. L., Bisbee.
Edmundson, C. L., Bisbee.
Frazer, Alex. I., Kofa.
Fanning, G. J., Prescott.
Sawyer, F. W., Prescott.
Yount, C. E. Prescott.

ARKANSAS.

Blankenship, W. H., Pine Bluff.
Butler, J. L., Sheridan.
Dickinson, W. H., Emmet.
Gant, Jas. Robt., Ft. Smith.
Johnson, Dave T., Ft. Smith.
Jelks, James T., Hot Springs.
McCurry, W. T., Texarkana.
Merritt, L. H., Forrest City.

CALIFORNIA.

Alden, B. F., San Francisco.
Bonar, R. M., Santa Rosa.
Besson, E. A., San Francisco.
Buchanan, R. A., San Francisco.
Butler, T. P., San Diego.
Bullock, R. R., San Francisco.
Beyer, Herman, Oreano.
Condit, J. D., Pasadena.
Chancellor, P. S., Santa Barbara.
Casey, Philip F., San Quentin.
Deal, Louise B., San Francisco.
Fouch, Albert, Sutter.
Fields, David Blackstone, Weaverville.
Foulkes, Bruce, San Francisco.
Felt, Rae, Eureka.
Goodman, Minerva, Stockton.
Gunn, John William, Jr., San Francisco.
Howard, Edw. S., San Francisco.
Hamman, A. F., Long Beach.
Helgesen, Segrid, Templeton.
Hawkins, W. J., San Francisco.
Jordan, P. A., San Jose.
Jenks, C. A., Los Angeles.
Lynne, M. A. A., Napa.
Legge, Robt. T., Redding.
McLeod, J. H., Santa Rosa.
Morse F. W., San Francisco.
Moffitt, H. C., San Francisco.
McCleave, T. C., Berkeley.
Meneray, Prince A., Santa Rosa.
Peery, T. P., Yuba City.
Pierce, Clarence, Los Angeles.
Perdue, L. C., Chico.
Pierce, R. E., San Jose.
Stevenson, G. L., Sacramento.
Seibert, F. M., San Mateo.
Toland, M. R., Los Angeles.
White, J. Francis, East Auburn.
Watt, George, Orland.
Williams, Ralph, Los Angeles.
Williams, Annie W., Gonzales.
Young, W. J., Stockton.

COLORADO.

Brown, Joseph M., Akron.
Hereford, J. H., Cripple Creek.
Hanford, P. O., Colorado Springs.
McGill, E. D., Wray.
Pascoe, J. N., Silverton.
Pogue, George R., Greeley.

CONNECTICUT.

Kilbourn, Joseph A., Hartford.
Reeks, T. E., New Britain.
Rundlett, David Livingston, New Haven.
Williams, Allen H., Hartford.

DISTRICT OF COLUMBIA.

Beyer, H. G., U. S. Navy, Washington.
Curriden, G. A., Washington.

FLORIDA.

Ferris, F. F., Apalachicola.
McCall, C. P., Lemont.
McEachern, J. R., Monticello.
Thomas, R. Y. H., Jacksonville.

GEORGIA.

Funkhauser, W. L., Rome.
Richardson, E. H., Atlanta.
Roberts, S. R., Oxford.
Sullivan, J. S., Macon.
Wicker, R. H., Rome.
Wheeler, A. E., Atlanta.

HAWAIIAN TERRITORY.

De Faria, J. B., Honolulu.
Walters, St. David G., Honolulu.

IDAHO.

Burke, E. L., Culdesac.
Collins, I. S., Burke.
Noth, R. F., Minidoka.

ILLINOIS.

Allen, E., Sheldon.
Blomgren, C. E., Chicago.
Bartholomew, J. K., Chicago.
Brown, E. V. L., Chicago.
Biankini, A., Chicago.
Blazer, M. S., Manito.
Ball, A. W., Rushville.
Cupler, R. C., Chicago.
Davis, W. J. N., Chicago.
Daley, W. H., Chicago.
Day, J. A., Jacksonville.
Daniel, O. L., Murphysboro.
Edward, J. T., Chicago.
Eddy, J. H., Decatur.
Evensen, H. O., Ottawa.
Flatt, Stephen, Hardin.
Gregory, E. H., Chicago.
Gibson, A. Tilden, Morrisonville.
Gramm, Carl T., Chicago.
Harms, A. H., Sterling.
Hemingway, C. E., Oak Park.
Isham, I. D., Chicago.
Johnson, A. L., Prophetstown.
Kradwell, W. T., Joliet.
Kearsley, Mary J., Chicago.
Lunn, S. J., Chicago.
Lantz, Ida R., Oak Park.
McIntyre, George, Chicago.
McDeed, Winfield G., De Land.
Mangum, Wm. R., Buncombe.
McLaughlin, J. J., Chicago.
McKenney, G. M., Oregon.
Menn, Rudolph, Chicago.
O'Hara, F. S., Springfield.
Proudfoot, Alexander, Chicago.
Pusey, C. M., Chicago.
Parker, Wm., Mt. Sterling.
Renfrew, F. C., Sadorus.
Rees, Wm., St. Joseph.
Sweeney, J. L., Chicago.
Semple, W. F., Chicago.
Simmons, Albert C., Girard.
Snow, Frederick H., Chadwick.
Shastid, T. H., Harrisburg.
Sheppard, L. D., Chicago.
Warner, Arthur K., Chicago.
Walton, T. E., Danville.
Windsor, B. P., Mt. Auburn.
Young, C. O., Chicago.

INDIANA.

Abbott, Clarence, Otwell.
Busse, E. P., Evansville.
Cohen, David, Jeffersonville.
Cox, Lafayette T., Napoleon.
Cook, John W., Pendleton.
Duemling, Hermann A., Ft. Wayne.
Daniel, Wm., Corydon.
Dewey, E. L., Hammond.
Ford, O. P. M., Rising Sun.
Grayston, B. H. B., Huntington.
Jenkins, M. J., Richmond.
Knabe, Helene, Indianapolis.
Kennedy, Bernays, Indianapolis.
McDonald, A. J., Bedford.
Osterman, A. T., Seymour.
Smith, W. H., Bedford.
Shonkwiler, F. Marion, New Market.
Sloan, Wm. W., French Lick.
Schreiber, A. W., Lafayette.
Westfall, Arthur B., Lafayette.

INDIAN TERRITORY.

Booth, T. S., Ardmore.

IOWA.

Aschenbrenner, Carl F., Dysart.
Appel, Fred L., Muscatine.
Benedict, Chas. C., Menlo.
Beatty, E. D., Mallard.
Brann, J. V., Knoxville.
Brink, Milber, Boyden.
Bennett, G. J., Denver.
Barstow, J. M., Council Bluffs.
Conroy, H. H., Keswick.
Hull, F. C., Carlisle.
Luckey, G. M., Shellsburg.
Mantz, R. L., Cedar Rapids.
Morse, C. H., Eagle Grove.
Sawyer, P. E., Sioux City.
Smith, C. F., Des Moines.
Shelton, Bernard, Pulaski.
Talboy, J. H., Mapleton.

KANSAS.

Bice, G. R., Plainville.
Bodenhamer, Elmer A., Frederick.
Bertholf, C. M., Cherokee.
Duncan, E. C., Fredonia.
Graham, J. W., Wetmore.
Morrison, Hector, Womer.
Watkins, F. M., Wetmore.

KENTUCKY.

Froedge, C. W., Eighty-Eight.
Filiatreau, R. N., Knottsville.
Keen, L. O., Burkesville.
Lewis, A. S., Greensburg.
Lambert, Stinson, Owensboro.
McPherson, U. W., Sulphur Well.
Norment, Henry T., Anthoston.
Offutt, Vance, Jackson.
Royster, L. C., Smith Mills.
Rowe, A. M., Glasgow.
Stewart, P. H., Paducah.
Stone, W. S., Benton.
Thompson, W. R., Mt. Sterling.
Taylor, Z. G., Knob Lick.
Taylor, Eugene F., Lileton.
Williams, D. J., Ford.
Wilkerson, L. B., Russellville.
York, S. R., Center.

LOUISIANA.

Bernard, F. R., Lake Providence.
Brickell, W. E., New Orleans.
Delcourt, Adolphe, Sr., Terrebonne.

MAINE.

Pillsbury, C. W., Saco.

MARYLAND.

Hirsh, J. L., Baltimore.
Iglehart, N. E. B., Baltimore.
Litsinger, Glenn M., Baltimore.
McNeilan, Milton, Parkersburg.

MASSACHUSETTS.

Adams, James P., Lowell.
Belding, J. E., Springfield.
Eddy, George S., Fall River.
Gafney, H. D., Ware.
Joslin, E. P., Boston.
Sproull, J., Haverhill.
Sheehan, M. D., Stoneham.
White, F. W., Boston.

MICHIGAN.

Blanchard, F. N., Detroit.
Hilliker, J. B., Grand Rapids.
Noble, F. W., Remus.
Older, H. L., Morenci.
Zumstein, F. E., Detroit.

MINNESOTA.

Burton, O. A., Albert Lea.
Byrnes, W. J., Minneapolis.
Benham, E. W., Amboy.
Boyd, H. J., Alexandria.
Cavanaugh, J. O., St. Paul.
Cook, P. B., St. Paul.
Coon, G. M., St. Paul.
Duncan, W T., Fergus Falls.
Payette, C. H., W. Duluth.
Plummer, Henry S., Rochester.
Pool, Daniel, St. Paul.
Schjelderup, W. H., Granite Falls
Whiting, A. D., St. Cloud.
Woodruff, C. W., Chatfield.
Whyte, J. J., Bertha.

MISSISSIPPI.

Burnham, Chas. E., Big Springs.
Greaves, Walter J., Biloxi.
Linder, F. B., Oxford.
McEachern, C. G., Moss Point.

MISSOURI.

Ayars, T. R., St. Louis.
Atkins, Calvin, Independence.
Allison, Nathaniel, St. Louis.
Craig, T. B. M., Nevada.
Colley, E. A., Plattsburg.
Caldwell, W. C., Essex.
Cadwell, Victor, Essex.
Donnell, J. F., Festus.
Forster, Otto E., St. Louis.
Fowler, S. R., St. Louis.
Forgrave, H. S., St. Joseph.
Gilmer, J. E., Piedmont.
Grant, J. M., St. Louis.
Hall, H. R., St. Louis.
Heryford, W. B., Pickering.
Hamilton, R. L., Richmond.
Hickman, S. P., Ulman.
Kinner, Wm., Ferguson.
Lanier, L. H., Martinsburg.
Mueller, E. H., St. Louis.
Moore, G. M., Linn Creek.
Moore, J. G., St. Louis.
McNutt, I. N., Pevely.
McCulloch, G. A., Kearney.
Newhouse, Stanley, Kansas City.
Rice, J. J., Kearney.
Snodgrass, C. A., St. Louis.
Schmalhorst, D. E., St. Louis.
Shankland, W. M., Clinton.
Steedman, I. G., St. Louis.
Schwab, S. I., St. Louis.
Tureman, H. C., Kansas City.
Taylor, W. F. S., Poplar Bluff.
Talbot, Ambrose, Kansas City.
Wheeler, B. N., Kansas City.
Wilson, Ell, Leora.

MONTANA.

Bond, Harry A., Dillon.
Duncan, A. R., Kallspell.
Freund, I. D., Butte.
McGrath, George, Hamilton.
Packard, L. R., Whitehall.
Peek, W. A., Amador.
Warren, O. Y., Warm Springs.

NEBRASKA.

Andrews, James A., Holdrege.
Barton, A. E., Arcadia.
Bild, Elmer J., Page.
Butterbaugh, W. S., Johnson.
Hilton, D. C., Lincoln.
Hartwell, J. E., Crawford.
Thompson, T. D., West Point.

NEVADA.

Cox, J. E., Tonopah.
Dempsey, G. L., Fallon.
Drake, F. N., Goldfield.
Hood, W. H., Reno.
Samuels, W. L., Winnemucca.

NEW HAMPSHIRE.

Douglas, O. B., Concord.

NEW JERSEY.

Buchanan, J. Hervey, Plainfield.
De Hart, Clara M., Jersey City.
Dodge, Walter, Orange.
Harmon, W. J., Trenton.

NEW MEXICO.

Goelitz, Herman W., Las Vegas.
Long, John W., Tularosa.

NEW YORK.

Ippolito, Gennoro, New York City.
Kellogg, E. K. L., New York City.
Lambert, E. B., Port Jervis.
Pfeiffer, F., New York City.
Roberts, P. W., New York City.
Sinnott, J. J., Mt. Vernon.
Shrady, John Eliot, New York City.

NORTH CAROLINA.

Taylor, Isaac M., Morganton.

NORTH DAKOTA.

Irwin, S. H., Grand Forks.
Kaufmann, Carl, Wahpeton.
Mallarian, K. H., Fargo.
Sasse, E. G., Lidgerwood.
Shrodes, Geo. H., Lidgerwood.
Strauss, F. B., Glen Ullin.
Tronnes, N. L., Fargo.

OHIO.

Anders, C. I., Old Fort.
Brown, N. Worth, Toledo.
Chabot, G. W., Otway.
Dreyer, C. C., Toledo.
De la Barre, Paul, Port Clinton.
Edwards, H. E., Cleveland.
Fullerton, E. B., Columbus.
Houser, D. C., Millerstown.
Harrison, Charles M., Napoleon.
Hobson, J. A., Flushing.
Haldy, Walter A., Cleveland.
Halleck, F. D., Bowling Green.
King, C. W., Dayton.
Kleyinger, L. G., Dayton.
Kimmell, J. A., Findlay.
Marder, A. W., Lebanon.
Minton, Fred P., E. Toledo.
Moore, T. M., Willoughby.
Ong, A. R., Martins Ferry.
Pitkin, C. E., Cleveland.
Spence, W. S., Germano.
Snyder, A. E., Bryan.
Snyder, G. C., Moxahala.
Stephen, J. E., Drusilla.
Salzer, Moses, Cincinnati.
Thompson, J. A., Cincinnati.
Woolgar, W. J. W., Cleveland.
Young, H. A., Cleveland.

OREGON.

Ainslee, George, Portland.
Barber, J. R., Portland.
Coghlan, J. N., Portland.
Cauthorn, F., Portland.
Equi, Marie D., Portland.
Ferguson, E. E., The Dalles.
Ferguson, Belle C., The Dalles.
Flanagan, W. H., Grant's Pass.
Griffith, L. F., Salem.
Kelly, Richmond, Portland.
Manion, K. C., Portland.
McGavin, J. M., Portland.
Nunn, R., Portland.
Newth, C. H., Philomath.
Parker, M. E., Portland.
Paine, D. A., Eugene.
Panton, J. J., Portland.
Reuter, J. A., The Dalles.
Strickland, M. C., Oregon City.
Sheldon, S. H., Portland.
Taylor, Frank M., Portland.
Wallace, J. P., Albany.
Wheeler, C. H., Portland.
Walls, J. J., Portland.
Ziegler, Amelia, Portland.

PENNSYLVANIA.

Adams, C. W., Uniontown.
Allen, F. O., Jr., Philadelphia.
Bryant, Wm. C., Pittsburg.
Byrne, T. J., Philadelphia.
Barth, J. B., Charlerol.
Campbell, W. J., Mt. Union.
Dehoney, Howard, Philadelphia.
Enfield, Walter F., Bedford.
Fish, H. S., Sayre.
Gwyn, N. B., Philadelphia.
Henry, J. A., Lancaster.
Hough, C. B., Ambler.
Koons, J. H., Waynesboro.
McKee, Claude W., Scottdale.
Manning, C. J., Harrisburg.
Shurtleff, H. C., Philadelphia.
Smith, H. F., Harrisburg.
Scarlett, R. B., Philadelphia.
Updegrove, J. D., Easton.
Wechsler, B. B., Pittsburg.
Woods, G. H., Pine Grove Mills.

PHILIPPINE ISLANDS.

Newberne, R. E., Manila.
Thomas, R. C., Capiz.

RHODE ISLAND.

Ballou, Chas. O., Providence.
Hamlin, E. F., Statesville.
Watson, W. P., Pawtucket.

SOUTH CAROLINA.

Pack, W. S., Greenville.

SOUTH DAKOTA.

Berry, S. G., Tyndall.
Daniels, A. H., Mitchell.
Kammerling, T. S., Mitchell.
Kheiralla, G. I., Lake Preston.
Lawver, J. C., Spencer.
Morehouse, E. M., Yankton.
Miller, E. C., Brookings.
Sornsen, A. A., Summit.

TENNESSEE.

Dotson, Walter, Kempville.
Dake, R. W., Nashville.
Edwards, C. W., Memphis.

TEXAS.

Bowman, A. R., Uvalde.
Cathcart, J. W., El Paso.
Hildebrand, W. J., Gonzales.
Johnston, E. A., Amarillo.
Parr, A. B., Dimmitt.
Roebuck, L. B., Sweetwater.
Van Vettermana, Emanuel, Shiner.

UTAH.

Robison, Geo. E., Provo City.

VIRGINIA.

Chinn, Geo. E., Norfolk.
Henkel, Casper C., Shenandoah.
Hobson, S. W., Newport News.
Merlwether, G. D., Buena Vista.
Mitchell, L. G., Downings.
Robertson, E. W., Onancock.
Thornhill, W. B., Lynchburg.

WASHINGTON.

Gammon, C. P., Walla Walla.
Harrison, R. H., Tacoma.
Hawley, Alanson W., Seattle.
Van Vechten, W. B., Tacoma.
Wells, W. B., Hoquiam.

WEST VIRGINIA.

Barbee, H. A., Point Pleasant.
Bosworth, J. W., Philippi.
Doyle, J. H., Grafton.
Moore, J. W., Charleston.
Morgan, E. H., Eagle.
Proudfoot, M. H., Rowlesburg.

WISCONSIN.

Bacon, H. L., New London.
Bodorn, Thomas, Blair.
Bassard, Clemens, Richfield.
Cunningham, J. N., Stanley.
Cutter, J. D., Tomahawk.
Ellenson, E. P., Chippewa Falls.
Franzel, J. E., Howards Grove.
Glasier, M. B., Bloomington.
Grant, J. C., Lena.
Graenicher, Sigmund, Milwaukee.
Harter, A. F. S., La Crosse.
Horace G. Hilliard, Baraboo.
Ladwig, W. A., Edgar.
Luhman, F. W., Morrison.
McCormick, Hugh, New Auburn.
McKellar, A., Blanchardville.
Noble, J. B., Waukesha.
Nystrum, C. E., Medford.
Reinhardt, J. Paul, Fountain City.
Schoenfeld, Chas. J., La Crosse.
Shaw, B. W., Waunakee.
Storey, C. L., Hayward.
Ven Hengel, G. T. A., Waupun.
Winneman, F. A., Hazelhurst.

WYOMING.

Freeman, Chas. M., Rock Springs.
Godfrey, A. C., Lander.
Wicks, Jos. L., Evanston.

Marriages

LEO BLOCH, M.D., to Miss Elise Nichols, both of Louisville, Ky., June 6.

LOUIS E. SCHMIDT, M.D., to Miss Marie Mansfield, both of Chicago, June 1.

EDWARD M. HOLMES, M.D., to Miss Sadie Clohesy, both of Chicago, June 7.

EDWARD P. ANDREWS, M.D., to Miss Isabel Bain, both of Milwaukee, June 1.

ROY A. DODGE, M.D., Omaha, to Miss Ella Ruffner of Plattsmouth, Neb., June 3.

ROBERT S. ENGLER, M.D., to Mrs. E. Harriett Thornton, both of Philadelphia, May 9.

LEWIS W. SPRADLING, M.D., to Miss Lida Burns, both of Athens, Tenn., May 22.

JOHN COOK HIRST, M.D., Philadelphia, to Miss Maud Wilson Boyd of Maryland, June 1.

E. GECONA MAXWELL, M.D., to Miss Lila Parker, both of Wildersville, Tenn., May 21.

ORA J. CULBERTSON, M.D., to Miss Louise Leber, both of East St. Louis, Ill., May 25.

MERVYN ROSS F. TAYLOR, M.D., to Miss Jeannette Riley, both of Philadelphia, June 7.

GEORGE EDWIN BAXTER, M.D., to Miss Cecile Maude Hitchcock, both of Chicago, June 7.

O. P. HOPPING, M.D., to Miss Bertha Zella of Mount Pulaski, Ill., at Girard, Kan., May 24.

REINHARD E. WOBUS, M.D., St. Louis, to Miss Dora L. Schaffer of Quincy, Ill., May 23.

MILTON GOLDSMITH, M.D., to LUBA NATALIA ROBIN, M.D., both of Pittsburg, Pa., March 25.

CLINTON G. BECKETT, M.D., Hillsboro, Ind., to Miss Lillie Rhode of Winthrop, Ind., May 21.

WILLIAM DE FORREST OLMSTEAD, M.D., to Miss Martha E. Smith, both of Baltimore, May 29.

MILLS T. CHASTAIN, M.D., Marshall, Mo., to Miss Dora Cartright of Milton, Ore., May 24.

VICTOR D. MILLER, JR., M.D., to Miss Nellie Baechtel Loose, both of Hagerstown, Md., June 1.

A. D. BREWER, M.D., Belgrade, Mont., to Miss Florence Belle Somers of Grinnell, Iowa, May 22.

RICHARD WEIL, M.D., to Miss Minnie Straus, both of New York City, at Long Branch, May 30.

JAMES MAXWELL DELL, M.D., Gainesville, Fla., to Miss Johnnie Liddon of Ocala, Fla., June 7.

CHARLES M. HENDRICKS, M.D., Denver, Colo., to Miss Edith Louise Duguid of Toledo, Ohio, June 7.

JAMES E. HICKS, M.D., Mount Vernon, Ind., to Miss Lilian Harriet Ridley of Toledo, Ohio, May 25.

MICHAEL A. FLOERSCH, M.D., Hartington, Neb., to Miss Rose Uhlrich of Wamego, Kan., May 24.

MICHAEL H. ETCHEVERRY, M.D., San Diego, Cal., to Miss Caleste Lacoste of San Francisco, June 1.

BRUCE LINVILLE TAYLOR, M.D., Washington, D. C., to Miss Helen Sewell Child, at Baltimore, June 1.

ARTHUR F. HESS, M.D., Zanesville, Ohio, to Miss Grace G. Wallwork of the Adamsville road, June 8.

FREDERICK C. WARNSHUIS, M.D., to Miss Calla Ewing Bottsford, both of Grand Rapids, Mich., May 24.

LLEWELLYN POWELL SPEARS, M.D., to Miss Katherine Linwood Payne, both of Louisville, Ky., May 25.

HENRY STEPHEN SMITH, M.D., San Diego, Cal., to Miss May F. Lawton of Los Angeles, Cal., May 17.

WILLIAM WESLEY STALLWORTH, M.D., Fayette, Ala., to Miss Mary Ruth Plant of Birmingham, Ala., May 23.

JAMES A. REA, M.D., Wellington, Kan., to Miss Kate Parshall of Lamont, Iowa, at Newkirk, Okla., May 27.

WILLIAM ALVA DAVIS, M.D., Baltimore, to Mrs. Maria Kane Wetherill Apperson of Philadelphia, at Baltimore, May 25.

GEORGE BULLOCK WEISS, M.D., Washington, D. C., to Miss Virginia Tilard Syme of Winchester, Va., at Baltimore, May 25.

CLARK STEVENS FORTNEY, M.D., Howesville, W. Va., to MARY JEANETTE FANSLER, M.D., of Rowlesburg, W. Va., in Washington, D. C., May 25.

Deaths

Henry Putnam Stearns, M.D. Medical Institution of Yale College, New Haven, 1855, a member of the American Medical Association; sometime president and vice-president of the Connecticut Medical Society and the Hartford Medical Society; ex-president of the American Medico-Psychological Association, and of the Yale Medical Alumni Association; for 31 years superintendent of the Retreat for the Insane, Hartford; lecturer on insanity in Yale University Medical Department from 1876 to 1897; during the Civil War first surgeon of the First Connecticut Volunteer Infantry, and later brigade surgeon of volunteers and medical director; an eminent practitioner, teacher, alienist and expert on insanity, died at his home in Hartford, May 27, from general nervous breakdown, aged 77. The Hartford Medical Society, at a special meeting, passed resolutions of regret and voted to attend the funeral in a body.

James Thorburn, M.D. Toronto University Medical Faculty, 1856, for several years professor of pharmacology and therapeutics in his alma mater; president of the Canadian Medical Council in 1895, and of the Ontario Medical Council two years later; surgeon to the Queen's Own Rifles, a member of the staff of the Toronto General Hospital, died at his home in Toronto, May 26, from heart disease, after a short illness, aged 74.

John William Compton, M.D. Medical College of Evansville, Ind., 1873, assistant surgeon of the Seventeenth Kentucky Volunteer Infantry during the Civil War; at one time professor of materia medica and therapeutics in his alma mater, and from 1881 to 1885 president of the State Board of Health, died at the home of his son in Terre Haute, Ind., May 28, after a long illness, aged 80.

George Miles Palmer, M.D. University of Buffalo (N. Y.) Medical Department, 1865, supervisor of the town of Pike for five terms; representative from Wyoming County in the legislature for two terms; health officer of Warsaw; surgeon in the Army during the Civil War, died at his home in Warsaw, N. Y., May 28, after a lingering illness, aged 77.

Edward Payson Drown, M.D. Harvard University Medical School, 1893; city physician of Malden, Mass., 1895 to 1898, past president of the Malden Medical Society; member and district censor of the Massachusetts Medical Society, died at his home in Malden, May 25, from peritonitis, a few hours after an operation for appendicitis, aged 39.

Melville M. Shearer, M.D. Medical Department of the University of Iowa, Keokuk, 1864; surgeon of the Forty-eighth Illinois Volunteer Infantry during the Civil War; sometime physician of Sonoma County, Cal., and president of the Sonoma County Medical Society, died at his home in Santa Rosa, May 28, after an illness of two months.

John Findley Hathaway, M.D., a practitioner of Leavenworth, Kan., for more than 50 years, an early "free-state" and anti-slavery advocate, died at the Western Branch of the National Home for Disabled Volunteer Soldiers, Leavenworth, from cerebral hemorrhage, Oct. 27, 1904, aged 85.

Miles F. McTaggart, M.D. Philadelphia, 1865; College of Physicians and Surgeons of Ontario, Toronto, 1880, a member of the Medical Society of the State of California, died at his home in Reno, Nev., May 22, from heart disease, after an illness of six months, aged 55.

John Ford McCarthy, M.D. Rush Medical College, Chicago, 1855, surgeon of the Fifteenth and the Twenty-ninth Indiana Volunteer Infantry during the Civil War; postmaster of Valparaiso, Ind., for 12 years, died at his home in that city, May 27, from cancer, aged 77.

John Williams Streeter, M.D. Illinois, 1868, of Chicago, formerly major-surgeon First Infantry, Illinois National Guard, and assistant-surgeon general of the state, died at his summer home in Lake Forest, Ill., from spinal paralysis after an illness of several years, aged 63.

William Bernard Warren, M.D. Dartmouth Medical School, Hanover, N. H.; New York University, New York City, 1881, a member of the Massachusetts Medical Society, died suddenly at his home in Groton, Mass., April 29, from cerebral hemorrhage, aged 51.

Cranston de St. Remy, M.D. Faculty of Medicine of Queen's University, Kingston, Ont., 1903, of Kingston, house surgeon of the Manhattan Eye and Ear Hospital, died in St. Vincent's Hospital, New York City, April 7, after an illness of several weeks.

Hatton Nathan Thompson Harris, M.D. College of Physicians and Surgeons in the City of New York, 1885, surgeon United States Navy, died at the Naval Hospital, Pensacola, Fla., May 19, from appendicitis, after an illness of five days, aged 43.

D. H. Johnson, M.D. New York University, New York City, 1868, a member of the San Mateo County (Cal.) Medical Society, died from interstitial myocarditis at his home in San Mateo, March 12, after an illness of six months, aged 70.

Roger S. Turlington, M.D. Medical College of Virginia, Richmond, 1895, formerly of Bennettsville, S. C., died in the James Walter Memorial Hospital, Wilmington, N. C., from acute alcoholism, May 17, after an illness of four days, aged 40.

Henry B. Orr, M.D. Tulane University of Louisiana Medical Department, New Orleans, 1898, of New Orleans, for several years professor of biology in Tulane University, died at Touro Infirmary, New Orleans, May 29, after a long illness.

Albert H. Dickinson, M.D. University of Maryland School of Medicine, Baltimore, 1856, formerly of Galena, Md., was found dead in his room in Baltimore, May 23, from the effects of laudanum taken with suicidal intent, aged 74.

Emil Tietze, M.D. Royal Academy of Medicine and Surgery, Dresden, Saxony, 1847, for many years chief surgeon for the Pennsylvania Railroad at Altoona, died at the home of his daughter in Philadelphia, May 24, aged 76.

August F. Hipp, M.D. Cincinnati College of Medicine and Surgery, 1870, for 11 years physician at the Toledo (Ohio) Workhouse, died at his home in Toledo, May 25, after an illness of seven months, aged .66.

Joseph A. Gilliss, M.D. Washington University School of Medicine, Baltimore, 1870, of Baltimore; for 10 years vaccine and police physician, died suddenly from cerebral hemorrhage, in York, Pa., June 2, aged 64.

Arthur R. Boyle, M.D. Faculty of Medicine of Queen's University and Royal College of Physicians and Surgeons, Kingston, Ont., of Wychwood Park, Ont., died in Grace Hospital, Toronto, May 27, aged 70.

Ross Fear Klock, M.D. Medico-Chirurgical College, Kansas City, Mo., 1904, of Ottumwa, Kan., was drowned, March 18, while making a professional call which necessitated fording the Neosho River, aged 28.

Joseph S. De Jarnette, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1848, formerly treasurer of Spottsylvania County, Va., died at his home in Lewiston, Va., May 23, aged 75.

Thomas F. Steele, M.D. New York University, New York City, 1888, of Unionport, Borough of the Bronx, New York City, died May 27 at the Lebanon Hospital, New York City, from pneumonia, aged 35.

Amasa J. Mullan, M.D. Central College of Physicians and Surgeons, Indianapolis, 1893, died from general miliary tuberculosis at his home in Indianapolis, May 30, after an illness of four weeks, aged 34.

Clio B. Collier, M.D. Tennessee Medical College, Knoxville, 1900, assistant physician of Knox County, Tenn., died at his home in Knoxville, May 27, from tuberculosis, after a long illness, aged 28.

Ira P. Smith, M.D. Albany (N. Y.) Medical College, 1859, surgeon of a New York regiment during the Civil War, died suddenly from heart disease at his home in Bath, N. Y., aged 69.

Emmett Jowers, M.D. Tulane University of Louisiana Medical Department, New Orleans, 1890, of New Orleans, died May 22 at Channing, Texas, after a long illness, from tuberculosis, aged 46.

George Frederick Thomas, M.D., at one time professor of pathology in Cooper Medical College, San Francisco, died at his home in Berkeley, Cal., April 10, from senile debility, aged 83.

John L. C. Whitcomb, M.D. New York University, New York City, 1890, a member of the New York State Medical Association, died at his home in Liberty, N. Y., May 21, aged 43.

Robert M. Delzell, M.D. License Indiana, 1897, of Reynolds, Ind., was instantly killed May 29, by a tree struck by lightning falling on the carriage in which he was, and crushing him.

Everett L. Creesy, M.D. Harvard University Medical School, Boston, 1900, died at his home in Beverly, Mass., May 28, from the effects of morphin taken with suicidal intent, aged 30.

Lebbeus J. Bigelow, M.D. Baltimore Medical College, 1891, of Juniata, Pa., died at the Altoona Hospital from paretic dementia, May 23, after a long illness, aged 35.

C. W. Eagon, M.D., a veteran of the Civil War, in which he served as surgeon in a Virginia regiment, died at his home in Parkersburg, W. Va., May 22, aged 75.

William Hale Burns, M.D., for many years a practitioner of Richview, Ill., died at the home of his son in San Jose, Cal., from senile debility, May 18, aged 84.

Hal-Cee J. Hamilton, M.D. Hospital College of Medicine, 1897, died at his home in Clear Creek, Ind., from tuberculosis, May 26, after a long illness, aged 37.

Henry Wagner Kreider, M.D. Rush Medical College, Chicago, 1856, died at his home in Galesburg, Ill., May 25, after a short illness, from senile debility, aged 86.

J. R. Franklin, M.D. Medical College of Alabama, Mobile, 1880, a member of the Louisiana State Medical Society, died at his home in Hornbeck, March 31.

Sylvester M. Hewitt, MD. Vermont Medical College, Woodstock, 1843, formerly treasurer of Morrow County, Ohio, died recently at his home in Cincinnati.

Albert E. Harvey, M.D. Faculty of Medicine of Queen's University, Kingston, Ont., 1869, died suddenly at his home in Wyoming, Ont., May 27, aged 63.

John A. Greig, M.D. Manitoba Medical College, Winnipeg, 1887, formerly of Bottineau, N. D., died in Washington recently, from tuberculosis.

Charles A. Wean, M.D. Detroit Medical College, 1885, died at his home in Chicago, May 28, from septicemia, after an illness of 10 days, aged 40.

Charles C. Higgins, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1863, died in Chicago, May 26, from acute nephritis, aged 65.

Joseph E. Lowes, M.D. Ohio, 1868, of Dayton, Ohio, died from cerebral hemorrhage at Pasadena, Cal., May 24, after a short illness, aged 56.

Clyde E. Huffman, M.D. Cincinnati College of Medicine and Surgery, 1892, died suddenly in his office in Cincinnati, May 27, aged 38.

Matthew Q. Hendrix, M.D. Rush Medical College, Chicago, 1884, died at his home in Lexington, S. C., from smallpox, May 20.

Henry P. Watson, M.D. Dartmouth Medical School, Hanover, N. H., 1867, died at his home in Manchester, May 19, aged 61.

Philip Chisholm, M.D., the oldest resident of Cape Breton, died at Loch Lomond, C. B., March 10, aged 102.

Deaths Abroad.

M. Soupault, M.D., author of what promises to be a classic work on diseases of the stomach, his specialty, died at Paris May 2, in the prime of life, succumbing to diabetes.

K. Eckhard, M.D., professor of physiology at Giessen and author of a manual of anatomy, and of works on experimental physiology on the nervous system and on the glands and their functions, died at Giessen May 3, aged 83.

Paquelin, the inventor of the thermocautery which has made his name a familiar term in medical circles the world around, died at Paris about May 1, at an advanced age. He invented his cautery soon after he had commenced to practice medicine in Paris, about 1870. It was adopted almost at once by the profession. Paquelin was little known by the present generation. He always refused to accept the teachings of bacteriology and held himself aloof from those professing the microbian doctrine.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

ARE TRICHINÆ IN DRIED BEEF?

FALLS CHURCH, VA., May 26, 1905.

To the Editor:—Can dried or "jerked" beef infect the human alimentary canal with the tapeworm larvæ as does raw beef?

INQUIRER.

ANSWER.—We do not believe that dried or jerked beef will infect with trichinæ in the same way as raw beef. Of course something depends on the length of time that the beef is dried. We think it would be impossible for trichinæ to live long in beef that is properly dried.

CONVENTIONS TO BE HELD IN EUROPE.

PHILADELPHIA, May 25, 1905.

To the Editor:—Will you kindly publish a list of the medical societies and congresses that are to meet in Europe during the summer and fall of 1905. MIHRAN K. KASSABIAN.

ANSWER.—The following is a list of meetings of which we have information:

June 9 and 10: Fourteenth Congress of German Otologic Society. Homburg.

June 12: Congress of Laryngologists of Southern Germany. Heidelberg.

June 13: First Congress of German Laryngologic Association. Heidelberg.

June 13: Second French Congress for School Hygiene. Paris.

June 13 and 14: Congress of Bavarian Psychiatrists. Munich.

June 14 to 17: German Congress of Gynecology. Kiel.

July 25 to 28: Annual Meeting of British Medical Association. Leicester.

August 1 to 7: Fifteenth French Congress of Alienists and Neurologists. Rennes.

August 7 to 10: International Congress of Anatomy. Geneva.

August 13 to 15. Belgian Congress of Professional Medicine. Liège. Secretary, Dr. Hougardy, Rue du Diamant, Liège.

August 13 to 15: First International Congress of Physico-Therapy. Liège. Secretary, Dr. De Munter, 86 rue Louvrex, Liège.

September 11 to 16: Tenth International Antialcohol Congress. Budapest.

September 11 to 18: Fifth International Congress for Gynecology. St. Petersburg.

September 21 to 23: First International Congress of Surgery. Brussels.

September 20-23: Fifth German Medical Study Trip. Starts from Munich and ends at Meran. Dr. W. H. Gilbert of Baden in charge.

September 24 to 30: Seventy-seventh German Congress of Physicians and Scientists ("Naturforscher Congress"). Meran. General secretary, Dr. S. Huber, Meran.

September: First International Congress of Education and Protection of the Child in the Family. Liège. Secretary's address, 44 via Rubens, Brussels.

October 2 to 4: Seventh French Congress for Internal Medicine. Liège.

October 2 to 7: International Tuberculosis Congress. Paris.

The French Congress for Suppression of Illegal Practice of Medicine has been postponed to April 30, 1906.

The "Leipziger Verband" for the Promotion of the Material Interests of the Physicians of Germany holds its annual meeting at Strasburg in June.

BIOGRAPHY—DODERLEIN—FACULTATIVE ANAEROBE.

NASHVILLE, TENN., May 26, 1905.

To the Editor:—1. Is there a work published that gives a short biography of the most prominent *living* men of science (especially in medicine) in America or Europe or both? 2. With what institution, if any, is Döderlein connected and what is his address? 3. What is the meaning of the term "facultative anaërobe? Stengel's work on pathology and many of the standard works on surgery give exactly opposite definitions to those given by many standard text-books on bacteriology. X.

ANSWER.—1. The "Bibliographical Dictionary of Physicians," published by D. G. Brinton, 115 South Seventh Street, Philadelphia, 1886, contains short biographies of contemporary American physicians and surgeons. "Physicians and Surgeons of America," Republican Press Association, Concord, N. H., 1896, is a collection of biographical sketches of the regular medical profession. The two above mentioned are probably out of print, but will, perhaps, be found in some library. "Who's Who in America," A. N. Marquis & Co., Chicago, also contains the names and short biographical sketches of leading medical men. "Biographisches Lexikon hervorragender Arzte," by Professor Pagel of Berlin, gives similar information concerning European physicians (most of them deceased). It is in German (price, about $8.50), and may be purchased from W. T. Keener & Co., 90 Wabash Avenue, Chicago. Appleton's Universal and other good encyclopedias give sketches of the most prominent men in the profession. 2. Döderlein is professor of gynecology at the University of Tübingen, Germany. 3. A facultative anaërobe is a micro-organism which will grow either in the presence or in the absence of oxygen.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending June 3, 1905:

Richards, R. L., asst.-surgeon, now at San Francisco, relieved from further duty in the Philippines Division and ordered to Vancouver Barracks, Washington, for duty.

Cole, Clarence L., asst.-surgeon, recently appointed; ordered to the bacteriologic laboratory at Army Medical Museum, Washington, D. C., for temporary duty.

Richards, Robert L., asst.-surgeon, reported for temporary duty at Fort Mason, Cal.

Jones, Percy L., asst.-surgeon, ordered to report, June 12, 1905, to Major Wm. H. Arthur, surgeon, president examining board, Washington, D. C., for examination to determine his fitness for advancement to rank of captain.

Perley, H. O., deputy surgeon general, Mason, Charles F., surgeon, McCulloch, C. C., Jr., surgeon, appointed members of a board to meet at West Point, N. Y., about June 5, 1905, for the examination of such officers of the medical department as may be ordered before it to determine their fitness for promotion.

Rhoads, Thos. L., asst.-surgeon, under orders to report to president of examining board at West Point, N. Y., for examination to determine his fitness for advancement.

Rand, I. W., asst.-surgeon, ordered to accompany detachment of 10th Infantry from Presidio of San Francisco, to Portland, Ore.

Stone, John H., asst.-surgeon, relieved from duty at Fort Leavenworth, Kans., and ordered to Key West Barracks, Fla., for duty.

Hartnett, Eugene H., asst.-surgeon, relieved from duty at Key West Barracks, Fla., and ordered to Fort Hancock, N. J., for duty.

McCulloch, C. C., Jr., surgeon, relieved from duty at Fort Hancock, N. J., and ordered to the Presidio of Monterey, Cal., for duty.

Koerper, C. E., asst.-surgeon, having relinquished leave of absence, is ordered to the U. S. Army General Hospital, Washington Barracks, D. C., for duty.

Stiles, Henry R., asst.-surgeon, ordered to report to Major Wm. H. Arthur, surgeon, president of examining board, Army Medical Museum Building, Washington, D. C., June 15, 1905, for physical examination to determine his fitness for promotion.

Reno, Wm. W., asst.-surgeon, ordered to proceed from Fort Myer, Va., to Washington Barracks, D. C., for temporary duty.

Murtagh, John, A., asst.-surgeon, granted ten days' leave of absence.

Banister, John M., surgeon, left Fort Riley, Kans., on leave of absence.

Glennan, James D., surgeon, left Fort Myer, Va., on ten days' leave of absence.

Long, Charles J., dental surgeon, left Fort Harrison, Mont., for temporary duty at Fort Missoula, Mont.

Watkins, Victor E., contract surgeon, accompanied Troop M, 5th Cavalry from Fort Apache, Ariz., to Fort Du Chesne, Utah, and ordered to remain on duty with that troop.

Thorp, Charles W., contract surgeon, returned to Fort Ethan Allen, Vt., from temporary duty at Fort Adams, R. I.

Mason, George L., dental surgeon, ordered from Fort Oglethorp, Ga., to Fort Dade, Fla., for temporary duty.

Wolven, F. Homer, dental surgeon, left Fort Adams, R. I., for Fort Williams, Me., for temporary duty.

Ware, William H., dental surgeon, left Fort Grant, Ariz., and arrived at his proper station, Fort Logan, Colo.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, week ending June 3

G. M. Olson, B. Elmore and E. O. J. Eytinge, asst.-surgeons, appointed asst.-surgeons, with the rank of lieutenant (J. G.), from May 24, 1905.

Mears, J. B., acting asst.-surgeon, ordered to additional duty at the Marine Recruiting Station, Buffalo, N. Y.

Guthrie, J. A., surgeon, detached from the *Dixie* and ordered to the Naval Hospital, New York, N. Y., for treatment.

Murphy, J. F., asst.-surgeon, ordered to additional duty on the *Dubuque*.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending May 31, 1905:

Vaughan, G. T., assistant surgeon general, granted leave of absence for one month and fifteen days from June 16.

Carmichael, D. A., surgeon, bureau letter of May 24, 1905, granting him leave of absence for 14 days from May 12, 1905, amended so that said leave shall be for eleven days only.

Corput, G. M., P. A. surgeon, granted leave of absence for seven days from May 28, 1905, under paragraph 191 of the regulations. Granted extension of leave of absence for 23 days from June 4.

Holt, J. M., P. A. surgeon, granted extension of leave of absence, on account of sickness, for 1 month, from May 29.

Wilson, R. L., P. A. surgeon, granted leave of absence for ten days, from May 31, 1905.

Baley, C. W., acting asst.-surgeon, granted leave of absence for twenty-six days, from June 5 to May 27, 1905.

Edwards, J. W., acting asst.-surgeon, granted leave of absence for three days, from May 20, 1905, under paragraph 210 of regulations.

Schug, F. J., acting asst.-surgeon, granted leave of absence for fifteen days, from June 15 to May 26, 1905.

Stuart, A. F., acting asst.-surgeon, granted leave of absence for thirty days, from July 3 to May 27, 1905.

Gahn, Henry, pharmacist, relieved from duty at Purveying Depot, New York, and directed to proceed to Washington, D. C., for duty in the Purveying Depot in that city, May 27, 1905.

Stearns, W. L., pharmacist, relieved from duty at Purveying Depot, New York, and directed to proceed to Santa Rosa quarantine, Pensacola, Fla., and report to acting asst.-surgeon in charge for duty and assignment to quarters, relieving Pharmacist Chas. Miller, May 26, 1905.

Miller, Charles, pharmacist, on being relieved from duty at the Santa Rosa Quarantine Station, Pensacola, Fla., by Pharmacist W. L. Stearns, to proceed to San Francisco, Cal., and report to the

medical officer in command for duty and assignment to quarters, May 26, 1905.

Bierman, C. H., pharmacist, granted leave of absence for thirteen days, from June 7 to May 25, 1905.

Dr. Montafix W. Houghton, appointed acting assistant surgeon for duty at Providence, R. I., May 29, 1905.

Acting Asst.-Surgeon J. W. Hargis, resigned, to take effect May 31, 1905.

Health Reports.

The following cases of smallpox, yellow fever and plague have been reported to the Surgeon General, Public Health and Marine-Hospital Service during the week ended June 3, 1905:

SMALLPOX—UNITED STATES.

Arkansas: Fort Smith, March 11-April 22, 8 cases.
Florida: Jacksonville, May 20-27, 1 case.
Illinois: Chicago, May 20-27, 28 cases; Galesburg, May 20-27, 2 cases.
Louisiana: New Orleans, May 20-27, 11 cases, two imported.
Massachusetts: Lowell, May 20-27, 5 cases; Quincy, May 13-20, 1 case.
Michigan: Detroit, May 21-28, 2 cases; Grand Rapids, May 13-27, 41 cases, 8 deaths.
Missouri: St. Joseph, May 20-27, 12 cases; St. Louis, May 20-27, 3 cases.
Montana: Butte, May 14-21, 1 case.
Nebraska: Omaha, May 20-27, 3 cases; South Omaha, May 12-19, 3 cases.
New Hampshire: Manchester, May 20-27, 1 case; Nashua, May 20-27, 2 cases.
Pennsylvania: Lebanon, May 20-27, 1 case; York, May 20-27, 16 cases.
Tennessee: Memphis, May 20-27, 5 cases.
West Virginia: Morgan County, Oct. 31, 1904-May 25, 1905, 200 cases.
Wisconsin: La Crosse, May 20-27, 2 cases.

SMALLPOX—INSULAR.

Porto Rico: San Juan, April 1-30, present.

SMALLPOX—FOREIGN.

Africa: Cape Town, April 8-15, 4 cases.
France: May 6-13, Lyon, 1 case; Paris, 20 cases, 2 deaths.
Great Britain: Bradford, May 6-20, 9 cases; London, May 6-13, 2 cases; Newcastle-on-Tyne, May 6-13, 7 cases; Nottingham, April 29-May 6, 1 death; South Shields, April 29-May 6, 2 cases.
India: Bombay, April 25-May 2, 63 deaths; Karachi, April 16-30, 27 cases, 11 deaths.
Italy: Catania, May 11-19, 4 deaths; Cosenza Province, April 30-May 4, 2 cases; Lecce Province, April 20-May 4, 7 cases; Milan Province, April 20-May 4, 2 cases; Messina Province, April 20-May 4, 1 case; Mazzarino, April 20-May 4, 1 case; Palermo, April 29-May 13, 12 cases, 3 deaths; Potenza, April 20-May 4, 2 cases; Siena, April 20-May 4, 2 cases; Syracuse, April 20-May 4, 5 cases; Villenza, April 20-May 4, 2 cases.
Russia: Moscow, April 29-May 6, 5 cases, 2 deaths.
Spain: Barcelona, May 1-10, 6 deaths; Cadiz, April 1-30, 3 death.
Turkey: Constantinople, May 7-14, 2 deaths.
West Indies: Bridgetown, May 9, 1 case, probably imported.

YELLOW FEVER.

British Honduras: Belize, May 25-June 1, 4 cases, 4 deaths.
Honduras: Puerto Cortez, May 25-29, 5 cases, 3 deaths.
Mexico: Tierra Blanca, May 14-20, 1 death.
Panama: Panama, January 1-May 13, 63 cases, 22 deaths.

PLAGUE.

Africa: East London, March 18-25, 3 cases.
Egypt: Tukh District, April 15-22, 1 death; April 22-29, 2 cases.
Great Britain: Leith, May 6-13, 3 cases, 1 death.
India: Bombay, April 25-May 2, 822 deaths; Karachi, April 16-30, 483 cases, 422 deaths; Madras, April 22-28, 1 death.
Japan: Formosa, April 20-30, 238 cases, 210 deaths.

Society Proceedings

COMING MEETINGS.

AMERICAN MEDICAL ASSOCIATION, Portland, Ore., July 11-14, 1905.

Amer. Assn. of Genito-Urinary Surgeons, Montreal, June 13-14.
Massachusetts Medical Society, Boston, June 13-14.
American Pediatric Society, Lake George, N. Y., June 19-21.
Medical Society of New Jersey, West End, June 20-22.
Indian Territory Medical Association, Tulsa, June 20-22.
Michigan State Medical Society, Petoskey, June 28-30.
American Climatological Association, Detroit, Mich., June 29-30.
American Surgical Association, San Francisco, Cal., July 5-7.
South Dakota State Medical Association, Deadwood, July 5-7.
Amer. Assn. of Life Ins. Exam. Surgeons, Portland, Ore., July 10.
American Medical Editors' Assn., Portland, Ore., July 10.
Oklahoma State Medical Association, Guthrie, July 10-11.
American Urological Association, Portland, Ore., July 12-13.

NATIONAL ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS.

Annual Meeting, held at Washington, D. C., May 18-19, 1905.

(Concluded from page 1806.)

Report of the Committee on Early Diagnosis.

Drs. A. C. Klebs, Chicago; J. H. Musser, Philadelphia; F. Billings, Chicago; J. C. Wilson, Philadelphia, and H. R. M. Landis, Philadelphia, made the following report, which has been referred to on page 1805:

The diagnosis of phthisis, that well-developed stage of pulmonary tuberculosis, offers no difficulty whatever, the symptoms are well marked and typical, the pulmonary signs easily discoverable, the expectoration contains bacilli—the clinical picture is so typical that mistakes in diagnosis can not well be made, even by the superficially trained observer.

But this stage of pathologic development in the great majority of cases is reached only after very long periods, during which all signs and symptoms are less typical, less marked from that time on which infection took place. During this time, which marks the true incipiency of the malady and which anatomically is characterized by the formation of few isolated tubercles in lymph glands or lung tissue, no symptoms, or only vague general symptoms exist, and none on which to base a positive diagnosis of the disease. Investigation has shown that such infections are of very frequent occurrence, and that only in a comparatively small percentage of these cases does the disease develop further. This percentage, however, is sufficiently large to make tuberculosis the most destructive of all diseases, and the demonstration of its frequent and spontaneous arrest and of its curability by certain therapeutic measures at an early period of its development, must induce efforts of recognition long before the stage of phthisis is reached.

The discovery of the tubercle bacillus in the sputum of patients suffering from the disease constitutes a diagnostic means of indisputable accuracy. The consideration of the fact that tubercle bacilli can appear in the sputum only after the caseation and breaking down of a tubercle situated near a bronchus or bronchiolus, makes it certain that tuberculous changes occur previous to the appearance of the bacillus in the sputum. This is borne out by the clinical observation of a recognizable stage of tuberculous lung involvement, before bacilli are found in the sputum. The adoption of the term "closed," designating this stage, in opposition to "open," i. e., with bacilli found in the sputum, can be recommended for more general introduction.

From the therapeutic standpoint the diagnosis of pulmonary tuberculosis in its closed stage is of the utmost importance, the chances of permanent recovery diminishing proportionally with the postponement of rational therapeutic measures. These measures being, on the whole, nothing but a radical change in the patient's mode of life, will also interfere less with his usual occupations, the earlier the diagnosis is made. Hence also the paramount importance of an early diagnosis. The physician who declines to make a positive diagnosis of tuberculosis on account of the absence of bacilli in the sputum only, assumes a very grave responsibility, and great caution in this respect can not be urged sufficiently. Whenever certain signs and symptoms justify a suspicion of the disease, without there being positive evidence, it is wise to instruct the patient carefully as to his mode of life, to watch him closely, and to repeat the examination at stated intervals.

It may be said in general that a close and careful investigation of constitutional as well as local manifestations by the simplest methods will often reveal sufficient evidence for a positive diagnosis. The search for bacilli in the sputum, unfortunately, has brought about a neglect of these methods.

The history of the patient may or may not contain useful information; it ought to be carefully investigated in every case. Predisposing factors such as cases of tuberculosis in the family and among intimates, or an unhygienic mode of life, dusty and confining occupations, must all be taken into consideration; their absence in any one case, on the other hand, must not discourage further examination.

The symptoms of incipient tuberculosis will rarely offer anything typical. There may be very early hoarseness or a condition resembling that of chlorosis or neurasthenia, of bronchitis or dyspepsia. Cough may or may not be present. Hemoptysis, in the absence of other causes among all the symptoms which may be found in the history, is one of the greatest signs. Physical signs are sometimes absent for weeks after the hemoptysis. Vague as all these symptoms may be, they assume diagnostic value only when considered together with the results of a careful physical examination.

Here, inspection first of all will have to reveal conditions of stature and physical development which in their deficiencies we know to be indicative, if not of the disease itself, at least of a predisposition to it. Length and weight of body, circumference and degree of expansion of chest, are data of importance and in their correlation give indication of the bodily condition and state of nutrition. Still we must not depend on finding often the classical *habitus phthisicus*, the paralytic thorax, if we are to make an early diagnosis of tuberculosis. These data, however, as well as the determination of symptoms, are of greatest value as a guidance in subsequent examinations, and for that reason should not be neglected in any case.

Of great importance is the temperature. Even a slight rise of temperature in the afternoon, if other causes can be excluded, ought invariably to arouse suspicion. Very often this is overlooked, and to avoid such oversight great care in the measuring of the temperature is to be recommended. Whenever possible, a two-hourly record for a period of several days ought to be taken, a good thermometer to be placed in the mouth with tightly closed lips and held there for at least five minutes, the patient in a room of even temperature. It should also be remembered that in some tuberculous patients the rise of temperature appears only after some exercise, in women before and at the time of menstruation.

The physical examination of the chest by inspection, palpation, percussion and auscultation, if carefully and properly performed, will give more direct evidence than other methods. It may be said here that the newer methods of examination, notably that with the Roentgen rays, can not, at least in their present state of development, claim superiority over the results obtained by the before mentioned methods.

On inspection very often a retardation in the respiratory movements over the affected lung portion can be observed, especially over one apex. This retardation is more pronounced in a more recent involvement of the corresponding area of the lung (Turban). Foci of greater extent diminish the excursions of the diaphragm of the affected side; this can be demonstrated on the fluorescent screen, but equally well and without apparatus by the observation of the diaphragmatic excursions by means of Litten's shadow.

The vocal fremitus in early pulmonary tuberculosis gives little information. It may be increased or decreased over areas of pleural thickening; over pleuritic exudations it is always diminished.

Painstaking percussion and auscultation of the chest, over all parts and always comparing the two sides, is of the greatest value. The use of the blue pencil for marking the border lines and determining the excursions of the lungs can not be urged too strongly; strong percussion, on the whole, should be avoided. Marked dullness is but rarely found over portions of the lungs in incipient tuberculosis; however, the percussion will elicit sometimes a significant retraction of one apex as compared with the other.

In judging the results of the examination by auscultation it should always be remembered that many of the signs are subject to considerable variation, depending on the time at which the examination is made. Râles, which can be easily discovered in the morning, will regularly be absent during the afternoon. On damp and rainy days they will be found when they are absent in dryer weather. In women pulmonary signs are accentuated at the time of menstruation.

All these circumstances must be considered before a final judgment of the case is given.

Although every portion of the lung (including the lingula over the heart dullness) should be examined with the stethoscope, particular attention will have to be paid to the upper portions of the lungs and also to the lower borders and to the axillary regions.

The rough and slightly diminished respiratory murmur may be regarded as the earliest auscultatory sign in early pulmonary tuberculosis. The former must not be confounded with the sharp (puerile) respiratory murmur, which is more a sign of increased function than of swelling of the mucosa: both are vesicular murmurs. The rough character is produced by a succession of sounds, following each other too rapidly for aural differentiation. If the succession be less rapid, then we speak of an interrupted respiratory murmur, which suggests much coarser changes. Thus the rough murmur changes the character of the respiratory sound; it loses its "smooth" quality and becomes "impure and roughened" (Sahli). When these adventitious sounds become audible beside the vesicular murmur, then we can speak of râles. The rough murmur is produced by slight inflammatory changes in the bronchioles, the air passing over an uneven surface and through a slightly narrowed lumen. It is principally audible during inspiration over the apices and below the clavicles. This murmur precedes the appearance of râles (not the case, as a rule, with the puerile murmur), and this is the earliest auscultatory manifestation of tubercular involvement of the air passages. Distinct attention, therefore, should be paid to it. The appearance of râles over the apices (also in the axillary region) is next to it in importance. Râles indicate catarrhal conditions; with them the intensity of the vesicular murmur is usually diminished; this is also produced by the more pronounced swelling of the bronchial mucosa. In the earlier stages there are usually fine crackling râles, which can often only be heard directly after the patient has coughed.

Bronchial respiration is heard but rarely in early tuberculosis; when it appears, we have to deal with a more extensive process. By its localization in the apices and in conjunction with other signs, it is, of course, pathognomonic of consolidation; the same may also be said in regard to the other deviations from the normal respiratory murmurs, which are indicative of profound tissue changes. On the other hand, pleuritic friction is often heard at an early period, most frequently in or near the axillary line, between the sixth and eighth ribs.

Only passing mention can be made of other diagnostic methods, of which tuberculin is the most important. Although it is well understood that by injection of small doses of tuberculin and by the febrile reaction thus produced in tuberculous individuals, we can diagnose early tuberculosis, the method necessitates great care in its application and an apparatus too complicated for general use. The dangers of the preparation in the hands of one well acquainted with the method are very slight, but by applying carefully the other means of observation and examination, a case will rarely be found in which it would add considerably to the information gained.

The fact that certain salts, especially iodin salts, increase catarrhal symptoms and thus make them more perceptible to auscultation, has led to their administration for diagnostic purposes. For similar reasons a general introduction of this method can not be recommended.

The examination with x-rays has the drawback of a complicated apparatus; besides, its value over the other methods has not yet been satisfactorily demonstrated.

Various other methods have been advocated for the early detection of tuberculosis—inoscopy, sphygmograph, sphygmomanometry, serum test, etc.—all apt to increase our knowledge of the disease, but of no practical advantage in the every-day diagnosis of so frequent a disease. The careful and painstaking application of the methods well taught and well understood, with the simplest apparatus, but applied with a broad conception of the pathogenesis of the disease, will bring about much earlier diagnoses than are usually made.

Report of Committee on Influence of Climate in Pulmonary Tuberculosis.

A committee, previously appointed for the purpose and consisting of Drs. Charles L. Minor, Asheville, N. C., chairman; S. E. Solly, Colorado Springs, Colo.; E. R. Baldwin, Saranac Lake, N. Y.; C. F. McGahan, Aiken, S. C.; Henry Sewall, Denver, and Norman Bridge, Los Angeles, made a report, to which reference has been made on page 1805. The full report requires more space than we can devote to the subject this week, so we quote the concluding portion:

No advanced workers in this line would to-day, as was formerly done, place climate first in the order of therapeutic measures. Let it never be forgotten that hygiene, diet, teaching and supervision must *always* come first, but, granted that

they are properly attended to, then enters the powerful rôle of climate, reinforcing and accentuating the effects of these other measures, and yielding results that can not be approached even with the same care and watching and food in less favorable climates.

Climate has been defined by Parke Weber as "a combination of various conditions of the atmosphere and earth's surface determining the suitability of a region or a site for the life and health of animals and plants," and climatotherapy as "the utilization of climate to promote the comfort and recovery of the sick or to prevent the development of disease."

W. L. Dunn has also well said that "a climatic resort is a place where there is a maximum of sunshine, a minimum of fog and mist, relatively few hours of rainfall, a relatively low humidity, great purity of the atmosphere and an opportunity for efficient medical supervision." Altitude is not referred to here, despite its great value, as not being a factor in all climates beneficial in tuberculosis.

To discuss here the various forms of climate is not within our province, but it should rather be our effort to point out what in general are the effects which in climate have a beneficial influence. These can be classified in the order of their importance as: 1. Abundance and bacteriologic and chemical purity of the air; 2, sunshine; 3, coolness, or, in a certain number of cases, warmth; 4, dryness, or, in a few cases, a moderate degree of humidity; 5, altitude; 6, wind; 7, equability; 8, soil.

The bacterial and chemical condition of the air has been carefully studied and has been found to vary from a very high pollution in the streets of our large cities to an almost absolute purity in high mountains, open seas, deserts and arctic regions, and is very low in country and mountain climates, especially when sparsely settled.

Recalling the powerful rôle of streptococcal and other mixed infections in pulmonary tuberculosis and their power of changing a simple tuberculosis with chronic advance into a destructive consumption, noting also the bad effects of dusty atmospheres in producing bronchial catarrh, and especially the rapid lessening of mixed infections and such catarrhs in the purer air of our climatic resorts, the importance of this factor does not need to be further dwelt on. We would only here note that we believe it is chiefly due to the reinfection of the diseased lung by pus organisms and its irritation by dust, to which is often due the relapses of some cases when they return to city life.

After pure air we would place sunshine and sun heat, whose effects are both direct and indirect. Directly while its effects are evidently beneficial, they have never been completely analyzed and, therefore, will not be dwelt on here. The indirect effects of sunshine as seen in its powerful stimulation of the patients' spirits is of great importance.

Dryness in most cases is a most important factor through its valuable anti-catarrhal effects, but, when extreme, this influence may be reversed and there are not a few cases in which a moderate degree of humidity is more beneficial.

Generally, low relative humidity with moderately low temperatures has a tonic effect and is beneficial in irritated conditions of the respiratory mucous membrane, while such low humidity with very low temperatures, while stimulating, is apt to irritate the mucous membrane. Low relative humidity with high temperature is generally debilitating. High relative humidity and moderate temperature is soothing to the irritated mucous membranes, but high humidity combined with low temperature favors catarrh. On the whole, in pulmonary tuberculosis, low relative humidity with moderately low or low temperatures is most generally suitable, and the average tuberculous patient always makes his best gains in cold, dry weather, where such conditions prevail, but there are certain cases which do better with a high relative humidity and warm temperature.

Equability in older people or in the very feeble can be of great value, but is not as important as used to be supposed. In stronger cases variations in temperature stimulate the vital activities; hence, generally speaking, equability is not an important factor.

Wind, when the patient is directly subjected to it, is harmful, but when he is properly protected its purifying influence on the air, provided vegetation is sufficient to prevent dust-storms, is beneficial.

Altitude.—Most authorities are agreed that, other things being equal, some degree of altitude, owing to the great purity of the air and to its stimulating effect on the metabolism and appetite, etc., is most desirable, but it is not here our function to discuss the large question that this opens up. Enough to say that care should be used to choose an altitude suited to the patient's degree of vitality and heart power.

But a study of these local conditions and their adaptability to any given case is not enough. The temperature of the patient should be studied, as well as his docility and intelligence, for these play an important part in getting the best results from a climatic cure. In a few homesickness can be so severe and unyielding as to make a departure from home impossible. Others are so intractable and so unwilling to obey any instructions that they are apt to injure themselves by imprudences.

Above all, the financial condition of the patient is a determining factor, for, as one of your committee has elsewhere written, "If, however, one has to choose between treating patients in narrow circumstances in their own homes or sending them to a resort where their poverty will not enable them to get the necessary conditions of quarters, diet and care, which are so essential, by all means let them stay at home. By changing their houses, by moving to the top floor, using the roof as an outdoor sun parlor, and spending the utmost possible part of their time there, by economizing in every other way in order to be able to spend more freely for good food and cookery, much can be done, provided always that their lives can be properly supervised. Where pecuniary reasons prevent the patient from seeking a special climate, excellent results can thus be had, though with greater difficulty, in the patient's home, if the case is not too far advanced and that home not too miserable."

For the submerged tenth climatotherapy, save as supplied by the municipality or state, or philanthropic effort, is an impossibility and even the getting of proper conditions in their own homes is for them a Utopian idea. That municipal or state sanatoria have been opened for this class near our cities, but in localities whose purer air and favorable conditions mark them as climatic resorts, gives hope in this direction, but the only permanent results among the poor will come from a prophylaxis based on teaching them decent modes of life, on improvement of bad sanitary conditions and on a change in the impossible hygiene of their lives. For those in modest or narrow circumstances it is only desirable when they will be able to get at the resort equal or better conditions than they could have at home. For those who are comfortably off, or for the well-to-do, it seems to your committee that there can not be a moment's doubt that any results that they could obtain at home by the most careful treatment, even if their home doctors are absolutely familiar with the kind of detailed and personal work which these cases require, can be infinitely improved and the percentage of cures or arrest greatly increased by the carrying out of similar treatment under the favorable influences of climate.

We would here also say that, with rare exceptions, the patient who leaves the resort, however well he may be and however great the improvement in his physical findings, should not be told that he is cured, but only that the process is arrested and that if when he returns home he, by faithful living, can show for two years a continuance of such conditions, that then he may justifiably consider himself cured.

A misunderstanding of this fact is largely responsible for the popular condemnation of climatic cure. A climatic resort should be looked on as a university where the patient goes to get, under proper conditions, that discipline and instruction which he will bring back with him into his daily life at home, where he should serve as a teacher of those with whom he is thrown, and the physician in a climatic resort will be of use to his patient in proportion as he is able to be a forceful and stimulating teacher.

AMERICAN GYNECOLOGICAL SOCIETY.

Thirtieth Annual Meeting, held at Niagara Falls, May 25-27, 1905.

Under the Presidency of DR. E. C. DUDLEY of Chicago.

Accidental Rupture of the Non-Parturient Uterus, with Report of Cases.

DR. GEORGE W. JARMAN, New York, reported five cases of accidental rupture of the non-parturient uterus, and drew the following deductions from his own cases and those reported by others: 1. That the operation of invading the cavity of the uterus should not be regarded lightly, and that the same care in the details of asepsis should be carried out as in a laparotomy. 2. That great care should be used in the introduction of steel dilators, and at no time forcing them into the cavity of the uterus. 3. That as one's experience in gynecology increases, the use of the uterine sound decreases, and the fingers more and more frequently take the place of the curette to remove secundines from the uterus. 4. That sterile water is the best fluid for irrigating the uterine cavity. 5. That if a rupture or perforation of the uterine wall occurs, it is better to perform a laparotomy and assure one's self of the safety of the patient than to hope that no untoward results will ensue. 6. That if one can not be certain of the asepsis of the curettage, it is better to use a small drain through the vagina, and a slightly elevated posture of the patient, than to regret its non-use after the development of septic peritonitis. 7. That in properly conducted cases observed soon after the accident, there should be almost no mortality.

DISCUSSION.

DR. A. PALMER DUDLEY, New York, said he has perforated the uterus four times. In one case, after introducing the instrument into the uterus, he withdrew what he supposed was a fungous growth or secundines, but which proved to be eight inches of small intestine. The intestine was pushed back through the opening made in the uterus and the patient let alone. She has since borne two children.

DR. HERMAN J. BOLDT, New York, said that a perforation of the uterus does not always cause serious trouble. Great discrimination should be used in those cases in which there is danger. In all instances of criminal abortion, where there is any suspicion that infection has taken place, the abdomen should invariably be opened. He has perforated the uterus a number of times, and has seen it perforated by others.

DR. EUGENE BOISE, Grand Rapids, Mich., reported two cases of perforation of the uterus, one of which occurred in 1871. The physician in attendance passed a sound clear up to its handle. Nothing was done and the patient developed no symptoms. In the other case the uterus was perforated with a curette; the cavity was thoroughly washed out, the patient put to bed without anything further being done, and she made an uninterrupted recovery.

DR. FERNAND HENROTIN, Chicago, has seen five cases in which the uterus was perforated. One was accidental. One was the result of the work of an abortionist, and on opening the abdomen, nine days after the supposed operation, the patient being septic, he found a bougie nine inches long in the abdominal cavity. The patient recovered after undergoing a severe trial.

DR. ANDREW F. CURRIER, New York, agreed with the previous speakers that in many of the cases in which perforation occurs no damage will result if the intestine has not been withdrawn. If there is a mere puncture of the uterus, if the woman is not septic, it is safe to leave her alone and do just as little manipulation as possible. But supposing the uterus was in a soft, friable condition, one is confronted with the alternative of either closing the perforation or of removing the uterus. In many cases the removal of the uterus is preferable, and more than likely will result in more benefit to the patient than the mere closure of the rent or perforation. The key to successful treatment is complete drainage, and if there is already a septic uterus and one simply closes the wound, he is by no means sure that the sepsis will not continue. In cases of that kind, it is prudent to remove the uterus, leaving the wound in the vagina open and establishing free drainage.

DR. A. LAPTHORN SMITH, Montreal, does not think the curette is responsible in most cases for perforation of the uterus. He confessed to having perforated this organ six or eight times, and he has no fear of the result if the parts are thoroughly aseptic.

DR. CLEMENT CLEVELAND, New York, perforated the uterus with a sharp curette on one occasion when he was talking to his class about the carefulness with which the instrument should be used. The patient was to have been operated on for a lacerated cervix and lacerated perineum. He immediately postponed the operation, put the patient to bed, and no bad results followed. He thought the society should exercise its influence toward eliminating the sharp curette from the bag of the general practitioner, as it is fraught with the greatest harm to women if used in the careless way it is to-day.

DR. WM. E. MOSELEY, Baltimore, said that both the dull and sharp curettes have their place. Personally, he first introduces the dull instrument for diagnostic purposes, and then the question as to whether the dull or sharp curette shall be used depends on the character of the tissues he has to deal with. There are some cases in which there is more danger of perforating the uterus by the use of the dull than by the sharp curette.

DR. WM. H. WATHEN, Louisville, does not think the dull curette has any place in the surgery of an experienced gynecologist. The man who can not use a sharp curette without injuring his patient or perforating the uterus had better refer his cases to someone who can. Occasionally cases are reported where the uterus has been perforated by experienced operators. Curettage should be done by the sharp curette, or decidual remains should be removed by the finger.

DR. ELY VAN DE WARKER, Syracuse, N. Y., stated that uterine curettement is attended with more or less danger, and should be confined to the hands of good gynecologists, and rarely ever or never done by the general practitioner.

DR. SETH C. GORDON, Portland, Maine, said that occasionally he has pushed a sound through the uterus, but by leaving the patient alone he has not seen any harm result.

DR. P. A. HARRIS, Paterson, N. J., has perforated the uterus twice, once through the corpus posteriorly and once anteriorly. The perforation posteriorly was done by the curette, and the one anteriorly by his dilator. With his present dilator there is a device attached to it which registers the exact number of pounds exerted by the operator in dilating the cervix.

DR. T. A. REAMY, Cincinnati, Ohio, said that perforation of the uterus was an accident liable to happen to any man. He had perforated the uterus with a sharp curette within the last two years. He curetted a woman a short time ago whose condition was such that his consultant was in doubt as to whether she had cancer of the body of the uterus or whether it was the result of a chronic endometritis. In curetting the uterus rather thoroughly he accidentally perforated it. A pelvic abscess resulted, which was opened, and the patient made a good recovery.

DR. E. C. DUDLEY, Chicago, stated that within five weeks he perforated a uterus with the curette. The uterine wall was not more than a thirty-second of an inch thick, the thinness being due to a localized pathologic condition. A considerable quantity of bloody fluid was found in the cul-de-sac of Douglas, which was sponged out, the abdominal cavity flushed out with salt solution, and after closing the wound in the uterus with a purse-string suture, the abdominal wound was closed, and the patient made a good recovery.

Treatment of Retroversion of the Uterus by Shortening the Utero-sacral Ligaments.

DR. A. W. JOHNSTONE, Cincinnati, stated that the first step in either retroversion or prolapse is due to a stretching of the utero-sacral ligaments. This stretching is most commonly due to a low grade of infection spreading to these ligaments from the uterus or other contiguous structures, that made them lose their tone. A few cases are due to direct violence. The operation consists in shortening the utero-sacral ligaments through the vaginal incision. The uterus is replaced and the prolapse cured. Shock is *nil*, and convalescence smooth.

A New Plan of Procedure in Retrouterine Displacements.

DR. E. E. MONTGOMERY, Philadelphia, suggested a combination of operative procedures employed by Gilliam, Ferguson and Simpson. It permits of treatment of diseased ovaries and tubes, leaves the uterus a freely movable organ, supports it by normal elastic and muscular structure, capable of undergoing evolution and involution, and, finally, affords no opportunity for the formation of adhesions.

Inflammatory Conditions of the Appendix Accidentally Brought to Light in Pelvic Operations.

DR. HUNTER ROBB, Cleveland, Ohio, stated that of 370 appendices removed and examined microscopically, 103 were normal; 46 showed signs of a chronic and 1 of an acute appendicitis. In 88 cases there was an hypertrophy of the subperitoneal or internal coat, or of both coats. In 66 cases the changes were of doubtful significance; in 36 the lumen was occluded; in 16 dilated; in 12 the appendix contained concretions; in 1 case the appendix was cystic and had undergone myxomatous degeneration; in 1 case no lymphoid tissue was present.

Appendicitis in Its Relation to Pregnancy.

DR. HENRY C. COE, New York, cited 8 illustrative cases from his private practice, 4 patients recovering without operation, 2 being operated on at the third and fifth months, without interruption of the pregnancy, while the remaining two were carried through the puerperium and submitted to operation later. The writer's views coincide practically with those of Pinard, namely, to treat appendicitis in the pregnant female according to the same rules as in the non-pregnant. In mild cases carry the patient to term, if possible, and operate as soon as convenient after the puerperium, if the trouble persists. With the persistence of local pain, and if an induration is felt, he would operate as in any other case. Perforation and abscess formation call for immediate operation, rapid work, as little handling of the uterus as possible, and free drainage.

Officers Elected.

The following officers were elected for the ensuing year: President, Dr. R. B. Maury, Memphis, Tenn.; vice-presidents, Drs. Howard A. Kelly, Baltimore, and Reuben Peterson, Ann Arbor, Mich.; secretary, Dr. J. Riddle Goffe, New York City; treasurer, Dr. J. Montgomery Baldy, Philadelphia.

Hot Springs, Va., was selected as the place for holding the next meeting.

(To be continued.)

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Creosote and Guaiacol.

The following combination containing creosote is recommended by Beasley in the treatment of vomiting of pregnancy:

℞.	Creosoti	m. i	06
	Cocainæ hydrochlor	gr. 1/6	01
	Cerii oxalatis	gr. ii	12

M. Ft. pil. No. i. Sig.: One pill on rising, followed by another later in the day, if necessary.

In flatulent dyspepsia the following is recommended:

℞.	Creosoti	m. iii	20
	Tinct. card. co	m. xv	1
	Syr. aurantii	℥ss	2
	Aquæ q. s. ad	℥i	30

M. Sig.: To be taken at one dose and repeated three times daily.

In phthisis he recommends the following combination:

℞.	Creosoti	m. ii	12
	Olei morrhuæ q. s. ad	℥i	4

M. Sig.: One teaspoonful three times daily. Or:

℞.	Creosoti	m. ii	12
	Paraffini liq.	℥ss	2
	Olei morrhuæ	℥i	4
	Pulv. acaciæ	gr. xxx	2
	Syr. aurantii	℥ss	2
	Aq. cinnamomi q. s. ad	℥i	30

M. Sig.: At one dose, to be taken in a little water and repeated three times a day after meals.

To lessen the cough in phthisis the following is useful:

℞.	Creosoti	℥ii	8
	Menthol	gr. v	30
	Spts. chloroformi q. s. ad	℥iv	120

M. Sig.: Ten drops to be placed on the cotton of an oronasal respirator, which should be worn for ten minutes six times a day. Instead of the foregoing, 20 drops or more of the mixture may be dissolved in a pint of water and vaporized from an ordinary bronchitis kettle.

The following containing guaiacol is of value in the treatment of pulmonary tuberculosis:

℞.	Guaiacol	m. iii	20
	Tinct. card. co	m. xxx	2
	Glycerini	m. xv	1
	Vini xerici q. s. ad	℥ss	15

M. Sig.: At one dose, to be repeated three times a day after meals. Or:

℞.	Guaiacol	m. iii	20
	Syr. picis arom	℥i	4
	Aquæ dest. q. s. ad	℥ss	15

M. Sig.: At one dose, and repeated every four hours, in water.

When there is a more or less constant hacking cough present the following, containing guaiacol, is recommended:

℞.	Guaiacol	m. ii	12
	Tinct. benzoini co	m. xv	1
	Syr. tolutani	℥ss	2
	Mist. amygdalæ q. s. ad	℥ss	15

M. Sig.: At one dose in a little water and repeated three times a day.

If diarrhea be present the following combination is recommended:

℞.	Bismuthi carb	gr. v	30
	Guaiacol salicyl	gr. x	65

M. Ft. cachet No. i. Sig.: One such cachet every four hours. Or:

℞.	Guaiacol carb	gr. v	30

M. Ft. cachet No. i. Sig.: One such cachet three times a day.

As an inhalant in phthisis the following may be used:

℞.	Guaiacol	℥i	4
	Terebene	℥i	4
	Menthol	℥ss	2
	Thymol	℥ss	2
	Spts. chloroformi	℥iss	6

M. Sig.: From six to ten drops placed in an inhaler and inhaled morning and night.

In cases of orchitis of doubtful nature the following is recommended:

℞.	Guaiacol	℥i	4
	Cocainæ	gr. v	30
	Paraffin. mollis q. s. ad	℥iss	45

M. Ft. unguentum. Sig.: To be smeared over the affected parts and covered loosely with lint.

When the appetite is much impaired in phthisis the following combination is sometimes recommended:

℞.	Creosoti	℥ss	2
	Tinct. nucis vom	℥i	4
	Mucil. acaciæ	℥ss	15
	Syr. hypophos. q. s. ad	℥ii	60

M. Sig.: One teaspoonful after meals, in water or milk.

Pulmonary Hemorrhage.

In the treatment of pulmonary hemorrhage, McLaughlin, in *Ther. Gaz.*, states that those measures should be adopted which will assist in the formation of a clot as quickly as possible and which will prevent its dislodgment until sufficient time has elapsed for the eroded vessel to become permanently occluded. In order to accomplish this the reflex irritability of the lung tissue must be decreased and the respiratory mobility of the side from which the hemorrhage originates must be limited.

To meet the first indication the bromids and chloral are of value, and a still better preparation is opium, which will better control the cough. It lessens tissue metabolism and renders less oxygen necessary and thus reduces the amount of work of the lung.

To limit the respiratory excursions, strapping the sides of the chest from which the hemorrhage arises is the most efficient measure. These straps should be applied with considerable pressure during the act of forced respiration and should cover the entire half of the chest from the axillary fold to the lower costal margin.

By means of this treatment he claims the following advantages:

1. It favors the formation of a clot around the bleeding point and thus assists in controlling the hemorrhage.

2. It prevents the clot from becoming loosened or dislodged, thus preventing further hemorrhage.

3. The clot is formed in this manner in lung tissue which is in a state of relaxation rather than when it is on a stretch.

4. On the removal of the straps the expansion of that side of the chest and the consequent expansion of the air vessels of the contained lung will loosen up and favor the expulsion of any clots which may remain.

His routine treatment, so to speak, is as follows:

On the occurrence of hemorrhage the patient is given a hypodermic injection of nitroglycerin grain 1/100 (.0006), and morphin sulphate grain 1/4 (.015). The adhesive straps are then applied to the side of the chest from which the hemorrhage arises and the patient is placed in the horizontal position on the affected side. Six hours later, if the hemorrhage has ceased, the patient is moved into a summer house. At the end of four days the straps are removed and the patient is allowed to rest for one week in the open air.

Zederbaum, in *Colorado Med. Jour.*, states that, as a rule, hemoptysis does not require active treatment. The patient should be kept quiet in bed. A saline cathartic will check the hemorrhage more quickly than anything else. This author prefers the following combination when medicaments are required:

℞ Ext. opii
Plumbi acetatis, āā.....gr. ss .03
Pulv. rhei.....gr. xv 1

M. Sig.: At one dose. Or:

℞ Ext. opii.....gr. ss .03
Or:
Pulv. opii et ipecacuanhæ.....gr. v .30
Bismuthi subnit.....gr. x .65

M. Ft. chart No. i. Sig.: To be taken at one dose and repeated as indications demand.

The foregoing is also of value in checking the diarrhea which is so obstinate in tuberculosis as a rule. Another method of checking the diarrhea, as recommended by this author, is the administration of small enemata containing tannic acid, and tincture of opium suspended in cornstarch water, introducing an ounce or two of this mixture every three or four hours until the diarrhea is checked. To overcome the vomiting, which is sometimes severe, and which is caused in part by the effects of the toxin in swallowing the sputum, the author recommends lavage, cocain in moderate doses, or the following:

℞ Sodii bicarb.....gr. xv-xxx 1.-2
Aq. chloroformi
Aq. amygdalæ amaræ, āā.....ʒii 8

M. Sig.: Shake and take at one dose.

Strontium bromid is recommended to relieve the nervousness and insomnia, as it disturbs the stomach less than the other bromids. Codein is also recommended for this purpose.

The bowels should be regulated with pulvis glycyrrhizæ compositæ or a combination of cascara sagrada with strychnia and tincture of gentian compound.

The following combination is recommended for the relief of the cough:

℞ Dionin.....gr. viii .5
Apomorphinæ.....gr. i .06
Syr. altheæ
Aquæ āā, q. s. ad.....ʒiv 120

M. Sig.: One teaspoonful three or four times daily and an extra dose at night, if necessary.

The foregoing is especially recommended when the cough interferes with rest at night. The nasal passages, the larynx and the pharynx should be carefully examined, as they may be the seat of irritation which may resist the treatment by ordinary expectorants.

Acute Pruritus.

M. Gaucher, in *Amer. Med.*, recommends that patients suffering from acute pruritus shall be placed on a strictly milk diet at first and later a milk-vegetable diet. To calm the itching he recommends acetic acid lotions, followed by ointments of menthol and guaiacol, 1 to 2 per cent.

The following ointment is recommended:

℞ Guaiacol
Menthol, āā.....gr. xv 1
Lanolini.....ʒiiiss 100

M. Ft. unguentum. Sig.: Apply locally morning and evening.

Medicolegal

City Not Liable for Handling of Patients.—In the case of Lynch vs. City of North Yakima, where a city fireman sought to recover damages because a policeman had brought to the room where he was a man "charged with having been exposed to smallpox," the Supreme Court of Washington says that the handling of persons sick with contagious diseases is a duty which the city performs through its officers and agents in the exercise of governmental functions. The benefits of such service go to the public, and not to the municipality as a corporate body. Hence the manner in which the officers of the city perform said service can not, ordinarily, render the municipality liable in damages.

Competency of Witness to Testify to Fees.—The Supreme Judicial Court of Massachusetts states, in City of Lawrence vs. Town of Methuen, that it does not go so far as to say that one who is not a physician could not qualify as an expert on the question of the reasonableness of the fees charged by a physician for medical services, yet the practical result which would follow if every one who hired physicians or knew of the amount charged by them could be called as an expert on the question is a matter to be considered. In the case at bar, the court can not say that, on the evidence before him, the presiding judge did not find that the experience of a member for 16 years of the Board of Health of Methuen, who was called as a witness, was confined to the fees charged by two or three physicians, on two or three occasions, in the treatment of smallpox cases, which may have been quite unlike the case of smallpox in the action before the court, in a small town like Methuen, and consequently that he was not qualified to give an opinion on the reasonableness of the fee charged in this case by a physician in a city like the city of Lawrence.

Taxation of Private Medical School Hospital.—The Court of Appeals of Kentucky holds, in Wathen vs. City of Louisville, that an infirmary or hospital owned by the owners of a medical-school property is not exempt from taxation under the constitutional provision that "there shall be exempt from taxation public property used for public purposes; places actually used for religious worship, institutions of purely public charity, and institutions of education not used or employed for gain by any person or corporation, and the income of which is devoted solely to the cause of education." Here it appeared that medicines were dispensed and patients were treated free of charge, unless they were able to pay from $3 to $5 per week, and that the income from the hospital did not meet its expenses, by from $5,000 to $7,000, when interest was charged on the investment in the hospital. But the court says that it was manifest from the evidence that the hospital was maintained because it was necessary to the successful conduct of the school of medicine. Without the clinical instruction and the operations by the professors in the presence

of the students, the school could not be maintained with success. The hospital was an adjunct or a part of the medical school. Whatever gain might result from the operation of the medical school went to the owners of the property. While the evidence showed a great deal of charity work was performed in the treatment of patients and in dispensing medicines, still the institution was conducted for profit, and, as it was operated for gain, no part of it was exempt from taxation, under the constitutional provision quoted.

Radiographs.—The Supreme Court of Iowa says, in the case of State vs. Matheson, that the process of *x*-ray photography is now as well established as a recognized method of securing a reliable representation of the bones of the human body, although they are hidden from direct view by the surrounding flesh, and of metallic or other solid substances which may be imbedded in the flesh, as was photography as a means of securing a representation of things which might be directly observed by the unaided eye at the time when photography was first given judicial sanction as a means of disclosing facts of observation; and for that purpose *x*-ray photographs, or skiagraphs, or radiographs, as they are variously called, have been held admissible on the same basis as photographs. Therefore the court has no difficulty in holding that a radiograph admitted in evidence in this case, after proof that it was taken by a competent person, was admissible to show that there was in the body of the person of whom it was taken, at the time it was taken, some hard substance, in the shape of a bullet, near the spinal column. True enough, there was no evidence that this object which was represented in the radiograph was a bullet, but it was proper for the jury to take the evidence for what it was worth, as indicating that something in the shape of a bullet was lodged in the man's body. Whether it was in fact a bullet, they must determine, just as they would have been required to determine the fact if the witness had testified that he saw something the size and shape of a bullet. That was all he could have told simply by looking at it if it had been exposed to view. Of course, evidence as to the location of the bullet at a time subsequent to that when it first lodged there after being fired would not be material in determining the course that it took, unless there was some reasonable ground for assuming that its location had not changed in the meantime. But the court thinks it can properly take judicial notice of the fact that a bullet imbedded in human flesh usually becomes encysted, and does not change its location without external interference. And it seems to the court that the probability that the bullet when discovered by means of the radiograph was in the same position that it was when first lodged in the man's body was sufficiently strong to have warranted the jury in taking the information furnished by the radiograph for what it was worth, in their judgment, in determining whether the course of the bullet after entering the body was downward or upward.

Violation of Practice Act by Fitter of Glasses.—Section 21 of chapter 176 of the laws of South Dakota of 1903, regulating the practice of medicine, provides that: "When a person shall append or prefix the letters M.B., or M.D., or the title Dr. or Doctor or any other sign or appellation in a medical sense to his or her name or shall profess publicly to be a physician or surgeon * * * he or she shall be regarded as practicing within the meaning of this act." The defendant in the case of State vs. Yegge, who was charged with practicing medicine without a license, had a sign in front of his office with the name "Dr. Yegge" thereon. There was also introduced in evidence the following notice: "Ophthalmology. A Science for the Analysis of the Cause of Human Ills and How to Abolish Them. Everybody should know that this is a science that practices by guesses. It differentiates between functional derangements and disease. By its assistance nature cures cross-eyes, without operation; headache without drugs; hysteria without a straight jacket; female disorders without a trip to the hospital; and hundreds of nervous troubles. Simply removing causes is the secret. A true Ophthalmologist explains your case to you. Dr. M. F. Yegge," giving address and location of office. The Supreme Court of South Dakota thinks it was quite clear from the evidence that the letters "Dr." were used in a medical sense, and affirms a conviction. It says that the legislature evidently intended, in enacting the law, to prevent persons not properly educated in the science of medicine from assuming to act as a physician, and to protect the public, and it has deemed it proper that every person assuming to act as a physician or surgeon should be properly licensed. In carrying into effect this law, it was competent for the legislature to define, as it has assumed to do in Section 21, what evidence shall be deemed sufficient to constitute a practitioner within the meaning of the act. In view of the testimony of the physicians as to the proper definition of ophthalmology, it was quite clear from the defendant's advertisement that he had assumed to hold himself out as a physician within the meaning of the act. And it was not only clear from the language of the advertisement itself, which would be generally understood as an assumption on his part of being a regular physician, or at least a specialist in that branch of medicine treating of ophthalmology, but the legislature has declared that prefixing the term "Dr." to his name should be so regarded. The law should not be so construed as to deprive the people of the benefits intended by the act, but such a construction should be given it as to carry into effect the evident intention of the legislature.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

May 27.

1 *Intermittent Claudication and Allied Syndromes Due to Angiosclerosis of the Extremities. J. R. Hunt, New York.
2 *Gardener's Spade Deformity and the Silver-Fork Deformity in Fractures of the Carpal End of the Radius. J. B. Roberts, Philadelphia.
3 *Changes of View in Appendicitis Work. R. T. Morris.
4 *Toxemia of Intestinal Origin as a Condition Predisposing to Minor Infections. H. A. Houghton, New York.
5 Responsibility in Mental Deformity. J. Weir, Jr., Owensboro, Ky.

1. **Intermittent Claudication and Allied Syndromes.**—Hunt has made an exhaustive study of all aspects of this affection, which was first described by Charcot in 1858. Alcoholism, syphilis, gout, nicotinism, diabetes, exposure, flatfoot, compression by a truss, aneurism, the neuropathic diathesis, and congenital insufficiency of the cardiovascular apparatus are cited as etiologic factors. The pathologic findings may be summed up in one word—angiosclerosis, though in advanced cases secondary changes of a trophic nature frequently occur, and the vasomotor element is also of importance in producing the spasm. While the typical picture of the disease comprises intermittent limping, with the paroxysm during activity and complete freedom during rest, sensory symptoms and weakness, in some cases, may be present more or less constantly and may give rise to errors in diagnosis. Cases in which the anus, rectum or bladder, brain, kidney or retina were affected have been recorded, and it is also thought that the paroxysms of angina pectoris may be referable to a similar condition of the coronary arteries. The prognosis as regards cure is unfavorable, but by suitable treatment, consisting of rest, potassium iodid, cardiac tonics, warm foot baths and galvanic foot baths, much may be done toward warding off indefinitely the threatened gangrene. Digitalis, ergot, nitroglycerin, and very hot or very cold baths should be avoided. Four illustrative cases are described, and in conclusion the author says that angiosclerosis of the extremities in its gravest form, uncomplicated by a vasomotor neurosis, leads to spontaneous gangrene. If the angiosclerosis occurs in combination with a vasomotor instability and a tendency to vasomotor spasm, the syndrome of intermittent claudication results. This is characterized by the development of sensory (pains and paresthesia) and motor (weakness and rigidity) manifestations during the functional activity, with a rapid and permanent restoration to the normal during rest. The syndrome, however, has a wider and more general application to the whole circulatory

mechanism and has been observed in relation to various organs of the body (heart, intestines, brain, kidney and eyes).

2. **Deformity in Fractures of Carpal End of Radius.**—Roberts directs attention to the fact that in addition to the so-called "silver fork" deformity produced in fractures of the carpal end of the radius when the lower end of the bone is forced backward, there occurs in some cases a different deformity due to forward displacement. In such instances, instead of the classical picture presenting a convexity over the dorsum of the wrist, the convexity is in front, and the planes of the forearm and hand are related to each other much like those of the handle and blade of the gardener's spade. Great force is often necessary in dislodging the small radial fragment from its new position; but unless this is accomplished the fracture is not reduced. Various types of such fractures, together with appropriate forms of dressing, are shown in numerous illustrations.

3. **Changes of View in Appendicitis Work.**—Morris says that although formerly he used to forbid morphin altogether, his views on the subject have changed, and he now gives it cautiously in cases in which there is great restlessness. Both gauze packing and iodoform gauze have been abandoned altogether, as well as the use of buried sutures of silkworm gut. A standard length of one and one-half inches for the incision has been adopted for nearly all instances, including cases of abscess and peritonitis, and it has been found safer to deal with adhesions by touch than by sight. The time limit has also been greatly reduced, and now it is common to have the time from the first incision to the last suture occupy not more than seven or eight minutes. All patients are operated on, even if moribund, a preliminary infusion of salt solution being given; adhesions are freely separated if necessary, but not otherwise, and the idea of flushing out the abdomen has been dropped. After eliminating the features which seemed to have a special death rate of their own, viz., gauze packing, iodoform gauze, long incisions, and the expenditure of time in unnecessary detail of work, 100 consecutive operations were reported with a 2 per cent. death rate. The author does not favor the removal of the normal appendix in the course of other operative work, and he now uses a cigarette drain in all cases in which pus or septic débris have been left in the peritoneal cavity. The dictum of operating as soon as the diagnosis is made holds good, with certain exceptions, but it is still a question what to do with patients who are convalescing from the attack. In interval cases it now seems best to operate only when, on palpation, the appendix is found to be the definite seat of chronic infection or of adhesions which cause symptoms.

4. **Toxemia of Intestinal Origin Predisposing to Minor Infections.**—Houghton describes 30 cases of minor infections, in nearly all of which a toxemia of intestinal origin appeared to be present. Evamination of the urine showed that 27 out of 30 patients had an excess of indican; 1 case presented glycosuria and indicanuria, 1 glycosuria, and 1 tuberculosis. The conclusion is that in many cases of vital decrease manifested objectively by minor septic infections, toxemia of intestinal origin may be regarded as the predisposing cause. The practical bearing of this conclusion is far reaching and explains such problems as that encountered by the surgeon when two patients of apparently similar vitality show a great difference in recuperating powers after the same operation, or why one exposed person contracts an infectious disease and another does not. The practical application of the conclusion means attention to the proteid fermentation taking place in the bowel, particularly in those cases in which the urine presents a large amount of indican. It is not sufficient simply to produce evacuation of the bowels. The indicanuria must be treated by diet and other procedures looking toward its complete cessation. This will undoubtedly completely cure many troublesome cases of recurring minor infections.

American Medicine, Philadelphia.

May 27.

6 Allurophobia and the Power to be Conscious of the Cat as Near, When Unseen and Unheard. S. W. Mitchell, Philadelphia.
7 Observations on Amebas Infecting the Human Intestine, with a Description of Two Species, Entameba Coli and Entameba Dysenterie. C. F. Craig, San Francisco.
8 *Chylous Ascites. J. F. Bell, Englewood, N. J.
9 *Results of Abdominal Operations. G. E. Shoemaker, Philadelphia.
10 The Lloyd Reaction for Morphin and Other Alkaloids. D. W. Fetterolf, Philadelphia.
11 Acute Carbon Bisulfid Poisoning. A. P. Francine, Philadelphia.

8. **Chylous Ascites.**—Bell cites the case of a man aged 57 from whom 106,370 c.c. of fluid were withdrawn in about ten weeks. At the last paracentesis the patient weighed but five pounds less than his normal average. The history would suggest a rupture of a large lymph duct, the thoracic duct, the receptaculum chyli, or a chylous cyst of the mesentery which has continued to discharge into the peritoneal cavity. The cause of the rupture is unaccounted for.

9. **Some Results of Abdominal Operations.**—Shoemaker deals with 100 unselected, consecutive cases, with 5 deaths, one patient moribund when admitted and rapidly incised for pus drainage without diagnosis; 1 seen two weks after onset with gangrene of several feet of small intestine; 2 bad chronic pus cases, and 1 patient with chronic inflammation of tubes, ovaries and appendix. In the 95 recoveries, hysterectomy was done 20 times; 9 times for malignancy. In malignant cases, the growth was separated through the vagina, followed by removal of the uterus through a suprapubic incision. In the 12 cases of fibroid tumor, hysterectomy by supravaginal amputation was done. Operation was done primarily for appendicitis 11 times, but in the course of other abdominal operations the appendix, not being normal, was removed in 22 other cases, so that altogether in one-third of the cases of the series the appendix was removed. The removal of the appendix probably increases the risk of the primary operation to a very slight degree, and is not advised under favorable conditions, as in a complicated hysterectomy. Of the 6 extrauterine pregnancies, all the patients recovered. A large number of other operations were done in a corresponding period, such as plastic perineal work, suspension of the kidney, curetting, etc., some of these operations being done in combination with abdominal section and all without mortality. In 68 per cent. of the cases requiring perineal repair, the anterior vaginal wall was also treated by the excision method.

Medical News, New York.

May 27.

12 Clinical Features and Treatment of Epidemic Cerebrospinal Meningitis. F. Huber, New York.
13 *Infantile Tuberculosis; Its Portal of Entry, Topography and Clinical Manifestations. R. G. Freeman, New York.
14 *Two Unusual Cases of Gastric Cancer. W. F. Cheney, San Francisco.
15 Present Clinical and Bacteriologic Status of Vincent's Angina. Wm. N. Berkeley, New York.
16 *Widal Reaction. E. Andrade, Jacksonville, Fla.

13. **Infantile Tuberculosis.**—According to Freeman, tuberculosis in infancy arises most often from an infection through either the respiratory or alimentary tract; the comparative frequency of these two modes of infection has not yet been definitely determined. The tuberculosis of early life is most common during the first year, when children are on an exclusive milk diet; much milk contains tubercle bacilli, and bovine tubercle bacilli are pathogenic for man. At this period, owing to the structure of the intestinal wall, bacteria can probably pass through it, although it is uninjured. Experiments on animals show that inhalation tuberculosis causes usually lesions of the bronchial lymph nodes and lungs alone, while, wherever the portal of entry, these structures become very early involved. Inoculation experiments prove that the mesenteric lymph nodes may be tuberculous without the presence of any gross lesions in them. Twenty-six and one-half per cent. of the 158 autopsies on tuberculosis cases at the Foundling and Nursery and Child's hospitals, which Freeman has tabulated, show intestinal or mesenteric lesion on gross examination. The tuberculosis of infancy, unlike that of later life, is usually an acute, widely disseminated, general disease, with moderate temperature and few symptoms and physical signs; unless the invasion of the meninges gives rise to symptoms. Tuberculosis of the cervical lymph nodes and of the

joints is rarely seen under the third year. The power to overcome a tuberculosis infection that has spread from the lymphatics and invaded the organs apparently does not exist in infancy. A series of autopsies in the same institutions, in which the intestines were carefully examined without being separated from the mesentery, and with microscopic examination of all suspicious thickenings, would probably show a much larger proportion of intestinal involvement, and a still greater proportion could be found by animal inoculations.

14. **Unusual Cases of Gastric Cancer.**—The first case cited by Cheney presented symptoms pointing toward either cancer of the liver or syphilis of the liver, with the probabilities in favor of the latter, because of the good nutrition of the patient, the absence of pain and of the usual symptoms accompanying malignant disease. The autopsy disclosed a carcinoma of the stomach, with metastatic tumors in the liver and elsewhere. The second case was looked on as one of secondary anemia, probably due to chronic malaria, the symptoms all pointing in that direction. An operation was finally thought necessary, and on opening the abdomen the tumor, which was thought to be an enlarged spleen, was found to be an enormous carcinoma of the splenic end of the stomach. In both these cases there were peculiarities in the clinical history and physical findings that made the diagnosis of gastric cancer unsuspected.

16. **Widal Reaction.**—From a careful comparison of the results obtained from the examination of 300 specimens of typhoid blood with both living and dead cultures of typhoid bacilli, Andrade concludes as follows: 1. Living and dead cultures are about equally sensitive to the action of the agglutinins of typhoid fever, though in dead culture the reaction may require a longer time to take effect, and it is, therefore, necessary to keep the specimen under observation for two hours. In some cases, the reaction is quicker with the dead than with the living cultures. 2. The dried blood method is equally effective with dead as with living cultures. 3. The reaction, when it takes place, is more characteristic with dead cultures than with living cultures. There are no pseudo-reactions with dead cultures. 4. Dead cultures do not seem to lose their sensibility to the agglutinins of typhoid fever for a long time. Andrade has now in use a dead culture which was prepared six months ago, and it reacts just as typically as when first used.

New York Medical Journal.

May 27.

17 *Intermittent Angeiospasm on the Basis of Chronic Malaria. F. Schwyzer, New York.
18 Acute Appendicitis. L. Brinkmann, Philadelphia.
19 *The Surgical Paradox. E. Van De Warker, Syracuse, N. Y.
20 Malposition of the Abdominal Viscera and Medical and Surgical Treatment for Some of the Acute Cases. G. E. Benninghoff, Bradford, Pa.
21 Case of Extreme Sepsis from Multiple Sinusitis, with Description of Operation. W. W. Carter, New York.
22 Diagnosis of Chicken-pox. W. L. Somerset, New York.
23 Mental Wards in General Hospitals. J. N. Mosher, Albany, N. Y.
24 Abortive Treatment of Gonorrhea in Man. Report of a Case. G. Gross, San Francisco.

17. **Intermittent Angeiospasms on Basis of Chronic Malaria.**—Schwyzer describes 8 cases which exhibited a number of symptoms in common due to a disturbance of the vasoconstrictor nerves caused by chronic malaria. Each patient gave a malarial history, and showed the external signs of chronic malaria. In each, the spleen was either large, or very large, and hard, when palpable; in most of them the liver was enlarged. A detailed analysis is made of the symptoms manifested in each case, from which the author concludes that these were cases of what he terms malarial angiospasm. The treatment of this form of malaria does not differ from that of chronic malaria in general.

19. **Surgical Paradox.**—Van de Warker's paper is essentially a plea for better teaching of surgery, and more of it, in medical colleges.

Boston Medical and Surgical Journal.

May 25.

25 *Consideration of the Pelvic Articulations from an Anatomic, Pathologic and Clinical Standpoint. J. E. Goldthwait and R. B. Osgood, Boston.
26 Foreign Body in the Esophagus. A. Coolidge, Jr., Boston.
27 *Conservative Operation on the Ovaries and Tubes: Analysis of Ninety Cases. R. G. Wadsworth, Boston.

25. **Pelvic Articulations.**—Goldthwait and Osgood present a complete study—anatomic, pathologic, and clinical—of the pelvic articulations for the purpose of calling attention to certain conditions concerning which the knowledge of the profession has been much less than the importance of the symptoms and the frequency of occurrence seem to justify. Their work, as well as the work of other investigators, makes it quite plain that the pelvic articulations, especially the sacro-iliac synchondroses, are by no means as stable as has been supposed, and that in man and woman definite motion exists under normal conditions. Clinical cases are divided into three groups; the first including the cases in which there is definite relaxation associated with pregnancy, representing an exaggeration of a normal condition; the second, the cases in which the relaxation is associated with menstruation, apparently representing also a physiologic condition, apart from any pathologic change with which we are at present familiar; and the third, the cases in which the lesion is due to trauma, general weakness, or some definitely known pathologic process. The authors discuss, in full, the clinical history of cases coming under this classification, mentioning particularly the methods of demonstrating the mobility of affected joints, demonstrating disease of joints, and the various forms of support used to relieve the strain on these joints.

27. **Conservative Operations on the Ovaries and Tubes.**—Wadsworth contributes the result of a detailed study of the after histories in 90 cases in which a conservative operation was done on the ovaries and tubes. Taking the series as a whole, 51 per cent. of the patients were cured, 35.5 per cent. were relieved, and 13.5 per cent. were not relieved. In 52 of the 90 cases, however, retroversion of the uterus was corrected, and in many of them lacerations were repaired. Therefore, these cases should be considered separately, since in them the symptomatic result is only in part due to the operations on the appendages. Of these 52 patients, 48 per cent. were cured, 36.5 per cent. were relieved, and 15.5 per cent. were not relieved. Of the remaining 38 patients, in whom the appendages only were diseased, 55.5 per cent. were cured, 34 per cent. were relieved, and 10.5 per cent. were not relieved. In 64 patients in whom one ovary was normal and the other was either resected or removed for cystic disease, 7 (11 per cent.) have come to second operation, while in 20 patients in whom both ovaries were cystic, and part of one or both were saved, 6 (30 per cent.) have had a second operation. In these 64 patients there was possibility of future pregnancy, and 17 (26.5 per cent.) have become pregnant, 13 of this number (20 per cent.) having a normal delivery at term, and 4 one or more miscarriages. Considering the cases together, without regard to the extent or multiplicity of operation, partial or complete symptomatic relief has been obtained in 86.5 per cent. Multiple operations give less good results as a whole than operations on the appendages alone, there being half again as large a per cent. of failures in the former class. When both ovaries are cystic and part of one or both are saved, the chance of secondary operation for recurrence of cystic disease is nearly three times as great as in those cases in which one normal ovary is present. In estimating the likelihood of subsequent pregnancies in any given case, the fact that the patient has borne children before operation nearly triples the chance of subsequent pregnancy.

Lancet-Clinic, Cincinnati, Ohio.

May 20.

28 Two Cases of Otitic Brain Abscess. G. F. Keiper, La Fayette, Ind.
29 Brief History of the Medical Libraries of Cincinnati. H. W. Bettmann, Cincinnati.
30 Value of a Medical Library to the Community. D. I. Wolfstein, Cincinnati.
31 *Suggestion as to the Treatment of the "Spotted Fever" of Montana. P. M. Ashburn, Ft. Missoula, Mont.
32 Eye, Ear and Throat Sequelæ of Diphtheria. L. D. Brose, Evansville, Ind.

31. **Treatment of Montana Spotted Fever.**—Ashburn (THE JOURNAL, May 27, 1905, p. 1686) recommends in the treatment

of this disease the Brand treatment of typhoid, plus the occasional use of normal salt infusions and a few medicines, principally calomel, alcohol and strychnin. He advises the immersion of each patient presenting a temperature of 102.5 F. in water having a temperature of 70 F., and keeping him there, constantly applying hand frictions to the body and limbs, with cold applications to the head, from ten to twenty minutes, according to effect, repeating this procedure every three hours as long as the temperature remains above the point indicated. This bath should be preceded by the administration of a stimulant (Ashburn prefers alcohol), and followed by a quiet rest in bed, under blankets, and, if necessary, with hot water bottles at the feet. Ashburn sounds the following note of warning: 1. That the lower the temperature of the water (below 60 F., say) the greater the contraction of the blood vessels of the skin, the slower their consequent dilatation, and the smaller the reduction of temperature and the greater the internal congestion. 2. That without friction a moderately cold bath (70 F.) may do harm in the same way, and may fail to reduce temperature. 3. That until reaction occurs the circulation is not benefited, and that to hasten reaction by friction is absolutely necessary for this reason also. 4. That the effect on the circulation, because in that way the condition of the skin, kidneys, lungs, nervous system and temperature itself are beneficially influenced, is the most important object to be attained. 5. That water not cold enough does not cause the primary spasm of the skin vessels, without which the tonic dilatation does not follow. 6. That alcohol or hot coffee by the mouth and ice water by the rectum add to the efficiency of the bath and hasten reaction. 7. That, while the temperature may be used as a guide within considerable limits, the circulation being most what we want to influence, the baths should be given at such fairly regular intervals as to exercise a continuous, beneficial effect on it, and should be graded by its condition rather than by the temperature.

St. Louis Medical Review.

May 20.

33 Malignant Tumors of the Extremities. C. G. Cumston, Boston.

Illinois Medical Journal.

May.

34 *Surgical Analgesia from Spinal Cocainization. A. E. Halstead, Chicago.
34½ Multiple Neurofibromata. R. B. Preble, Chicago.
35 *Larvated Forms of Exophthalmic Goiter. L. H. Mettler, Chicago.
35½ Pleurisy. A. R. Edwards, Chicago.
36 Diagnosis of Appendicitis in Children. J. H. Hess, Chicago.
37 Water Supply. J. M. G. Carter, Waukegan.
38 *Surgical Treatment of Sciatica. M. R. Barker, Chicago.
39 Some of the Newer Remedies. J. C. Beck, Chicago.
40 High Forceps, Pelvic Inlet Forceps; Its Indications and Relations to Forceps and Version. G. Schmauch, Chicago.
41 *Prison Tuberculosis. E. E. Tracy, Chicago.
42 Sterility in the Male. A. Schalek, Chicago.
43 Two Cases of Complete Perineal Prostatectomy by Young's Technic. J. Frank, Chicago.
44 Differential Blood Count, Technic and Clinical Value in Septic Cases. C. Hill, Chicago.
45 Bronchoscopy for the Removal of a Collar Button from the Lung. E. F. Ingals.
46 Colle's Fracture. E. A. Edlen, Moline.

34. **Spinal Cocainization.**—Halstead believes spinal analgesia is contraindicated in all cases in hysterical women, in young children, and in the insane. It should be used only when its action can be explained to the patient, and thus co-operation secured. Halstead does not consider any ordinary heart lesion a contraindication to its use. Any marked idiosyncrasy for cocain should constitute a positive contraindication against spinal analgesia. The surgical indications for spinal cocainization given by Halstead are the following: 1. In operations on the lower half of the body, when, from kidney, lung or heart disease, a general anesthetic is dangerous, and where infiltration or analgesia from neural injections of cocain are not possible. 2. In strangulated hernia or intestinal obstruction from other causes, and perforations, where considerable time may be required, thus contraindicating the use of local anesthesia. Spinal cocainization is an ideal method of securing analgesia, first, because the patient remaining conscious is not so likely to drown in fecal vomit; second, because the shock from the puncture is practically *nil*. In traumatic surgery of the lower extremities, spinal cocainization blocks the reflexes and eliminates, to a great extent, the risk of shock. In amputations above the hip, where shock from the operation is generally very severe, and often fatal, after cocainization of the cord, the amputation may be performed without any change in the pulse rate. In this class of operations, if, for good reason, unconsciousness is essential, as it sometimes is, a small amount of ether and chloroform may be administered to secure this end.

35. **Larvated Forms of Exophthalmic Goiter.**—Mettler emphasizes the fact that there are aborted, mild types of exophthalmic goiter; that they are not by any means uncommon; and that they are the most important cases for the physician's consideration from the standpoint of diagnosis, prognosis and treatment. Their diagnosis does not involve so much their mere differentiation from other diseases as it does the direct establishment of the existence of Grave's disease. This positive affirmation of the presence of this affection can not be made unless one or more of the cardinal symptoms—tachycardia, struma, exophthalmos and tremor—are present. Wanting all these, the diagnosis is worthless, no matter what other symptoms and complications may be present. Of the cardinal symptoms, the tachycardia, and of the minor or doubtful symptoms, those of a general neurasthenic nature, constitute the more familiar grouping in these important larvated types of exophthalmic goiter. Once the diagnosis is established in this type, the prime factors in the treatment of the case are absolute physical and mental rest and heightened nutrition.

38. **Surgical Treatment of Sciatica.**—The object of Barker's paper is to present a reasonable treatment for sciatica based on the etiology and pathology of the affection. The treatment is divided into two parts: (1) The dry or bloodless stretching of the nerve; (2) the introduction of normal salt solution between the nerve sheath and the nerve substance. The dry stretching, done by flexing the leg in extension on the abdomen, lessens the caliber of the nerve substance and thus relieves the pressure on it by a contracted sheath. To carry out the second part of the treatment, the nerve is exposed by an incision between the trochanter major and the tuberosity of the ischium. All the tissues are separated from the nerve, as far as possible, both longitudinal and laterally, but the nerve is not raised out of its bed and must not be on the stretch when the injection is made. As the salt solution is forced between the nerve sheath and nerve substance, the two are separated and the adhesions between them broken up. A common aspirator, with a barrel holding half an ounce, and having a needle about four inches long, is a satisfactory instrument with which to inject the salt solution. This process is repeated eight or ten times, changing the direction of the needle each time. The wound is closed, the patient put to bed, massage is practiced every day for ten days, and the patient made to use the limb from the first.

41. **Prison Tuberculosis.**—Tracy says that tuberculous patients must be isolated more particularly in prison than anywhere else. Convicts sentenced for only a short time enter these institutions, contract tuberculosis, serve their sentence, are discharged and roam about at large, spreading the disease, and die outside the prison walls. He urges the erection of proper sanitary cell-houses, and states that the prison physician should keep his patients in the open air as much as possible, and that when in the hospital he should isolate them. All tuberculosis patients should be clothed with flannels both winter and summer, and should receive a good nutritious diet with plenty of milk. For excessive coughing, he advises anodynes and good tonics.

American Journal of Surgery, New York.

April.

47 *X-Rays and Sterility. F. T. Brown and A. T. Osgood, New York.
48 *New Method of Performing Appendicectomy. C. W. Strobell, Rutland, Vt.
49 Paraffin in Surgery. A Critical and Clinical Study. (Continued.) W. H. Luckett and F. I. Horn, New York.
50 New X-Ray Tube Stand: A New X-Ray Table. W. M. Brickner, New York.
51 Chronic Constipation Due to Invagination of the Sigmoid into the Rectum and Its Surgical Treatment. S. G. Gant, New York.

52 Significance of Chronic Jaundice. C. A. Elsberg, New York.

May.

53 Gastroenterostomy. A. H. Ferguson.
54 Paraffin in Surgery. A Critical and Clinical Study. (Continued.) W. H. Luckett and F. I. Horn, New York.
55 Urethral Neoplasms. G. F. Lydston, Chicago.
56 Treatment of Acute Otitis Media in Childhood. P. Fridenberg.
57 Typhoid Ulcer—Its Surgical Aspect. T. B. Noble, Indianapolis.

47. **X-Rays and Sterility.**—Brown and Osgood urge *x*-ray workers to provide adequate protection for all parts of the body not directly exposed for examination or treatment, becaused repeated, prolonged exposures of the testes invariably produces sterility in the human being.

48. **New Appendicectomy.**—Strobell has devised a new operation which he believes will meet the requirements of more than 75 per cent. of the cases. The various steps of the operation are as follows: Tentatively, the muscle-splitting section, after McBurney, is always employed, the peritoneal opening not to exceed three-fourths of an inch, if possible. Through this small opening he introduces the beak of a short hysterectomy clamp, and grasps very gently a portion of the cecum and draws it upward through the opening, sufficiently far to seize it with fingers. The longitudinal band is readily found, and the appendix, if free, is easily brought through the opening. At no time should there be more than a square inch of intestine in sight. The appendix is now put on the stretch, and a longitudinal incision is made through the peritoneal coat, opposite the attachment of the mesentery, beginning at the base and terminating at the tip. This part of the operation is practically bloodless, as the incision traverses a "bloodless zone." Two Kelly's hemostatic forceps are now made to grasp the edges of the divided peritoneal coat, near the tip, while a third forceps grasps the head of the appendix and readily enucleates it from its bed, down to its base, with the aid of a scalpel or the gauze-covered finger. The next step is amputation of the appendix, one centimeter from the cecum. In doing this, Strobell proceeds to clamp just above the proposed line of amputation; while just below it he grasps the walls on the opposite sides with forceps. This insures control of the contents not only of the removed portion, but also of the stump, which is important in the subsequent steps. The appendix removed, he assures himself of the permeability of the lumen of the stump, cauterizes it with pure carbolic acid, and follows this with alcohol. The stump is now dilated, very gently, to its full extent. Next follows the most important part of this operation, the one on which Strobell bases his claim of originality. He introduces, through the canal of the stump into the lumen of the cecum, just at and parallel with the base of the stump, a small oval ring or band of metal (preferably of aluminum) of suitable size. The thumb and index finger are now made to compress the walls of the cecum, over the site of the ring, thus steadying it, while with a mosquito forceps the cut edges of the stump are inverted through the lumen of the ring, and into the cecum; firm compression of the ring is then made with the thumb and index finger, withdrawing meanwhile the inverting forceps. All that now remains to be done is to further compress the ring, which is accomplished with flat, smooth-faced compression forceps. No reinforcing stitches are necessary; the ring will hold the tissues without them. The cut edges of the peritoneal coat of the appendix are folded in upon themselves, and may thereafter be disregarded; nothing more is required but to drop the cecum back into the peritoneal cavity, after completing the toilet, and to close the abdominal incision. There are no sutures, no ligatures, no bleeding, no danger of secondary hemorrhage or of sepsis from possible infected suture or ligature material. The ring or band should be oval, not over one centimeter in its longitudinal diameter. It may be of any metal, but the ductility and lightness of aluminum makes it especially adaptable. The inside of the ring should be roughened with a graver, in one direction, to facilitate the withdrawal of the inverting forceps. The ring falls off and makes its exit from the bowels in about one week.

Virginia Medical Semi-Monthly, Richmond.

May 12.

58 Psychological Incident in the Court Room. T. D. Crothers, Hartford.
59 Abscess of the Lung—Operation, with Recovery. W. D. Travis, Covington, Ga.
60 Pernicious Malarial Fever, with Special Reference to the Hemorrhagic Types. Report of Cases. W. L. Crosthwait, Holland, Texas.
61 *Nephrectomy Performed for Gunshot Wound. J. McFadden Scott, Atlanta, Ga.
62 *Excision of the Urinary Bladder. G. T. Vaughan, Washington, D. C.
63 Typhoid Fever. F. M. Brantley, Senola, Ga.
64 Principles of Surgery. S. McGuire, Richmond.

61. **Nephrectomy for Gunshot Wound.**—Gaston's patient was shot in the left ninth interspace in the mid-axillary line, the bullet ranging down toward the crest of the ilium. The kidney was considered to be wounded, because of the direction of the bullet and the bloody condition of the urine. The kidney was removed, but the ureter was left loose, in the care of nature; the kidney space was packed thoroughly with iodoform gauze. The patient made an uneventful recovery.

62. **Excision of Urinary Bladder.**—In the case reported by Vaughan, a case of sarcoma of the vesical trigone, in a man, aged 32, the rectum was packed with gauze, a curved incision was made across the perineum, the bladder and prostate were dissected from the rectum and the space packed with gauze. The abdomen was then opened through the left rectus muscle, and by an incision at right angles along the pubes, chiseling off the bony attachment of the recti-muscles. The urethra was then divided in front of the prostate gland and the bladder separated from its attachments as far as the ureters. The peritoneum was split over the ureters and the bladder lifted up and opened, in order to see about removing the segment containing the mouths of the ureters, but as the disease involved the entire bladder this could not be done. The right ureter was completely occluded with two or three small calculi near its mouth, and was dilated to the size of one's finger with dark bloody urine. The ureters were cut off near the bladder and implanted separately into the sigmoid flexure by means of fine silk sutures. The patient died at the close of the operation from exhaustion.

Quarterly Journal of Inebriety, Hartford, Conn.

April.

65 *Study of the Effects of Alcohol on School Children. T. A. MacNicholl, New York City.
66 Contribution to the Study of Narcosomania. T. H. Evans, Philadelphia.
67 Treatment of the Morphin Habit. C. Pope, Louisville, Ky.
68 Things That Make Inebriates. D. Paulson, Hinsdale (Ill.) Sanitarium.

65. **Effect of Alcohol on School Children.**—In the course of a study of the relation of heredity to the mental deficiency of children, MacNicholl examined 55,000 school children, 10,800 from country schools and 44,200 from city schools. The 55,000 children, classified according to their standing in studies, appear as follows: Standard, 42 per cent.; below standard, 16 per cent.; dullards, 17 per cent.; very deficient, 25 per cent. Direct causes of dullness reported: Personal habits, 9 per cent.; environment, 11 per cent.; heredity, 65 per cent.; sickness, less than .03 of 1 per cent. Comparing city and country schools we find a preponderance of deficients in the city. Country schools: Dullards, 15 per cent.; very deficient, 7 per cent—a total of deficients in country schools of 22 per cent. City schools: Dullards, 17 per cent. plus; very deficient, 29 per cent. plus—a total of deficients in city schools of 46 per cent. The personal attitude to alcoholic drinks, including beer, wine and spirits, is reported in 34,000 cases, viz.: Abstainers, 73 per cent.; drinkers of beer, 23 per cent.; drinkers of spirits, including wines, 4 per cent.; drinkers of beer and spirits, 12 per cent. The parental attitude to alcoholic drinks is reported in 20,147 cases: Children of drinking parents. 6,624; children of abstaining parents, 13,523; children of drinking parents reported dullards, 53 per cent.; children of abstaining parents reported dullards, 10 per cent. The following is a summary of the family histories of 3,711 children of 1,100 different families traced through three generations: 1,871 males, 1,840 females; 19 precocious in one or more studies, 421 excellent. 981 fair, 2,290 dullards. The personal attitude to drink: 66

per cent. abstainers, 28 per cent. beer drinkers, 6 per cent. whisky drinkers, 14 per cent. beer and spirits drinkers. Family history in relation to drink: 2,713 had drinking parents, 2,771 had drinking grandparents, 2,530 had drinking parents and grandparents, 998 had abstaining parents, 757 had abstaining parents and grandparents. Of the children of drinking parents but abstaining grandparents, 73 per cent. were dullards; of the children of abstaining parents but drinking grandparents, 78 per cent. were dullards; of the children of abstaining parents and abstaining grandparents, 4 per cent. were dullards. Dividing the 3,711 children into two classes, viz., those free from hereditary alcoholic taint and those with hereditary alcoholic taint, some very striking contrasts may be noted. 1. Of those free from hereditary alcoholic taint, 96 per cent. were proficient, 4 per cent. were dullards, 18 per cent. suffered from some neurosis or organic disease. 2. Of those with hereditary alcoholic taint, 23 per cent. were proficient, 77 per cent. were dullards, 30 per cent. very deficient, 76 per cent. suffered from some neurosis or organic disease. From these studies, MacNicholl concludes: First, alcohol at the threshold of life is a bar to success and a foe to health; second, alcohol, by destroying the integrity of nerve structures and by lowering the standard of organic relations, launches hereditary influences which by continuous transmission gain momentum and potency and leave their impact on gland and nerve until the mental faculties are demoralized, physical energies hopelessly impaired, and the moral nature becomes degenerate and dies; third, if we are to make any material change in the ranks of mental deficients, we must adopt methods of prevention as well as methods of cure.

Journal of the Kansas Medical Society, Kansas City, Kan.

May.

69 Business Side of Professional Life. L. Reynolds, Horton, Kan.

Detroit Medical Journal.

May.

79 Sanitation on the Isthmus of Panama. W. C. Gorgas.
71 Borderline Between Ophthalmology and General Medicine. K. K. Wheelock, Ft. Wayne, Ind.
72 Nose and Throat Work for the General Practitioner. B. R. Shurly, Detroit.
73 Points on Retention of Urine. W. A. Hackett, Detroit.
74 Should We Have County Health Officers? F. E. Kitzmiller, Piqua, Ohio.

The Medical Herald, St. Joseph, Mo.

May.

75 Surgical Versus X-Ray Treatment of Rodent Ulcers and Epitheliomata of the Face, with Report of Operated Cases. C. O. Thienhaus, Milwaukee.
76 Points on Suprapubic Cystotomy. E. N. Wright, Olney, I. T.
77 Injuries to the Spinal Column. C. E. Black, Jacksonville, Ill.
78 Medical and Office Treatment of Gynecologic Patients. E. Brown, Omaha, Neb.
79 Skin Therapy. L. H. Warner, New York.

Northwestern Lancet, Minneapolis.

May 15.

80 Mortality, Disability and Permanency of Cure in Surgery. C. H. Mayo, Rochester, N. Y.
81 General Considerations in the Treatment of the Earlier Stages of Pulmonary Tuberculosis. L. A. Nippert, Minneapolis.
82 Importance of Nasal Breathing in Exercise. W. N. Porteous, Minneapolis.

Medicine, Detroit, Mich.

May.

83 History of Panama and the Panama Canal. S. Egbert, Philadelphia.
84 The Isthmian Canal Zone. J. McFarland, Philadelphia.
85 Medical Conditions of the Isthmus of Panama, with Other Notes. R. G. Curtin.
86 How Can the Physician Profit by Preventive Medicine? J. M. Taylor.
87 Accouchement Forcé. G. M. Boyd, Philadelphia.
88 Civil Malpractice. G. J. Tobias, Chicago.
89 Orbital Tumor of Ten Years' Standing. C. A. Leenheer.

Southern California Practitioner, Los Angeles.

May.

90 Flies as Carriers of Disease. J. O. Cobb, Los Angeles.
91 History of Medicine. J. P. Widney, Los Angeles.
92 Physical Inspection of Children—Tests. G. L. Leslie, Los Angeles.

Alienist and Neurologist, St. Louis, Mo.

May.

93 Status of Insane Homicides Under Illinois Law. J. G. Kiernan, Chicago.
94 Some Observations on Dementia Precox (Adolescent Insanity). D. R. Brower, Chicago.
95 Outlines of Psychiatry in Clinical Lectures. C. Wernicke, Breslau.
96 Mixoscopic Adolescent Survivals in Art, Literature and Pseudo-Ethics. (To be continued.) J. G. Kiernan, Chicago.
98 Panama Pan-American Medical Congress. C. H. Hughes, St. Louis.

Wisconsin Medical Journal, Milwaukee.

May.

99 Stokes-Adams Disease. C. H. Stoddard, Milwaukee.
100 Radical Treatment of Cancer of the Stomach. Report of Cases. H. Reinecking, Milwaukee.
101 Important Point in Our Warfare Against Tuberculosis. W. B. Hopkins, Cumberland, Wis.
102 Cryptorchism. P. H. Jobse, Milwaukee.
103 Complications of Labor at Term. O. T. Woolheiser, South Wayne, Wis.

Columbus Medical Journal.

May.

104 Traumatic Neurosis. H. C. Rutter, Columbus.
105 Intermittent Claudication. G. F. Zinninger, Canton.
106 Case of Tonsillar Tuberculosis. C. S. Means.

Chicago Medical Recorder.

May 15.

107 Gastroenterostomy. W. H. Wathen.
108 Cholecystotomy and Cholecystectomy. A. C. Wiener, Chicago.
109 General Anesthetics, Ether and Chloroform. H. D. Peterson, Chicago.
110 Impotence and Sterility. F. A. Leusman, Chicago.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

May 13.

1 *Logical Basis of the Sanitary Policy of Mosquito Reduction. R. Ross, Liverpool.
2 *Cause and Treatment of Pruritus Ani. F. C. Wallis, London.
3 Surgical Anatomy and Operative Treatment of Tuberculous Glands of Neck. W. G. Sutcliffe, Margate.
4 Congenital Hypertrophy and Dilatation of the Sigmoid Flexure. W. F. Brook, Swansea.
5 *After-History of Patients on Whom Gastric Operations Have Been Performed. C. M. Moullin, London.
6 Value of the Vermiform Appendix in the Treatment of Ulcerative and Membranous Colitis. J. Hutchinson, Jr., London.

1. **Sanitary Policy of Mosquito Reduction.**—The whole subject of mosquito reduction, says Ross, can not be scientifically considered without mathematical analysis. He believes that the effect of anti-propagation measures must always be a reduction of the mosquito density, not only within the area of operation, but to a distance equal to the ideal limit of migration beyond it. On the boundary of operations the mosquito density should always be reduced to about one-half the normal density, while the curve of density will rise rapidly outside the boundary and will fall rapidly inside it. As immigration into an area of operations must always be at the expense of the mosquito population immediately outside it, the average density of the whole area affected by the operations must be the same as if no immigration had taken place. As a general rule, for practical purposes, if the area of operations be of any considerable size, immigration will not very materially affect the result.

2. **Treatment of Pruritus Ani.**—In over 90 per cent. of cases of pruritus ani examined Wallace found a shallow ulcer situated between the two sphincters, more often in the posterior segment than in the anterior and generally near the dorsal midline. As this was a definite and constant lesion, he determined to treat it, believing it to be the cause of the trouble. The usual preparation for a rectal operation having been carried out, the patient is anesthetized and put in the lithotomy position. The sphincter is moderately stretched, and the ulcer or ulcers are brought into view and treated with the electric thermocautery. The cautery is also applied to the thickened skin, especially in any cases in which fissures or clefts exist between the hypertrophied skin folds. Vaselin is applied to the cauterized area, and a morphin suppository is inserted into the bowel. A pad of wool is kept in position by a T-bandage, and the patient is put back to bed and kept there. A purge is given on the third night, and a warm boracic bath is taken twice a day. After the bath the skin is thoroughly dried and powdered with starch and zinc powder, and a small piece of cotton-wool, impregnated with powder, is introduced just inside the sphincter. In all these cases the irritation ceases either at once or after a few days, and, if

proper care is taken, it does not return. The patients are usually well in about 14 days, but the absolute healing of the ulcer may often take longer than this. In cases in which the abrasion practically encircles the bowel it is better to dissect off the ring of tissue involved, bringing the upper cut edge down to the anal margin, to which it is attached by a continuous catgut suture—thus removing all the lining membrane of the proctodeum. These cases are not so immediately successful as the others because the condition of the mucocutaneous margin is indifferent and healing is at times protracted, and some temporary contraction may occur; but with proper care this disappears, the result is good and the pruritus is cured. Ambulant cases are treated as follows: The patient being placed in the knee-elbow position, a bivalve speculum is inserted into the rectum and kept in position about half opened. Some eucain is injected behind the ulcer. This renders the area anesthetic and brings the ulcer into prominence. The ulcer is either treated with lactic acid or burnt with the electric thermocautery, the speculum removed and a morphin suppository introduced. A zinc and starch powder is dusted over the skin and a pad and T-bandage are applied. The subsequent treatment is the same as has already been described.

5. **After-History of Gastric Operations.**—The after-history is given by Moullin of 24 patients operated on for some gastric disturbance. Considering these cases in conjunction with others previously published, he concludes that pyloroplasty can only be regarded as a very qualified success. The pain returned more or less in all the cases. The scar left seemed to have contracted again. Of 21 cases of gastroenterostomy, 12 patients may be regarded as cured and 5 as very much benefited by the operation. Of the latter, several are as well as they could ever expect to be under the conditions of the life they lead. The posterior transmesocolic operation was performed whenever practicable, but so far as the stomach is concerned, it seems to be immaterial whether the opening is made on the anterior or on the posterior wall. In either case it soon becomes the most dependent part. In addition to the gastroenterostomy in all but two a lateral communication was made as well between the contiguous sides of the jejunal loop for the purpose of preventing what is known as the "vicious circle." Moullin says that if pain is to be avoided after gastroenterostomy the opening in the stomach must either be at the cardiac end, and very free, so that the pyloric end has no work to do; or if it is placed at the pyloric end, for the same reason, there must be free division of the circular muscular fibers in the prepyloric portion. In either case adhesions, the results of past inflammation, must be dissected away or the stomach will continue to drag through them on the parietal peritoneum and the pain will continue.

The Lancet, London.

May 13.

7 Case of Concealed Menstruation with Remarks on Treatment. P. Horrocks, London.
8 *Nutrition and Malnutrition. W. H. Allchin, London. (Concluded.)
9 *Case of "Splenomegalic" or "Myelopathic" Polycythemia with True Plethora and Arterial Hypertonia Without Cyanosis. F. P. Weber, London.
10 Symptomatology and Diagnosis of Vincent's Angina. H. Vincent.
11 Carcinoma of the Uterus and Its Surgical Treatment. E. T. Thring.
12 *Technic of the Operation for Adenoids and Enlarged Tonsils, with Some Practical Suggestions. F. C. Carle, London.
13 *Anatomic Peculiarities of a Gall Bladder and an Appendix. F. Lemon, Hawthorne, Australia.
14 Cesarean Section for Congenital Malformation of the Cervix Uteri; Recovery. H. T. Skae, London.

8. **Nutrition and Malnutrition.**—In this paper Allchin discusses the rôle of oxygen in tissue metabolism, the part played by ferments in nutrition, the relation of lymphocytes to nutrition, the influence of the nervous system on nutrition, and the relation of ions to vital activity and nutrition.

9. **Splenomegalic Polycythemia.**—The case reported by Weber differs markedly in one particular—the absence of cyanosis—from cases previously reported by others as well as himself. The examination of the blood in this case was very complete, including a determination of its viscosity, the amount of albuminous substance in the blood plasma, the estimation of the salts, and a thorough cryoscopic examination. The Roentgen rays were used in the treatment, the patient having 21 sittings, five minutes each, the splenic region being exposed to the radiation, but without any beneficent effect. The treatment had to be discontinued because the patient complained more of headache and a feeling of congestion in the head. Weber believes that the order of development of the main symptoms and their causal connection to be as follows: 1. Increased erythroblastic activity involving a great part, but not necessarily the whole, of the bone marrow. 2. Increased viscosity of the blood resulting from the polycythemia. 3. Dilatation of small blood vessels, partly to lessen resistance to the abnormally viscous blood, partly to make room for dilution of the blood. 4. The "plethora vera" or "polyhemia" is probably to be regarded as an attempt to compensate for the increased viscosity of the blood and for the excessive percentage of the total blood volume occupied by the cells. In fact, it is necessary, first, that there should be sufficient blood plasma to nourish the tissues and to make metabolism possible; and, second, that the viscosity may not become so great as to render sufficient circulation impossible. 5. The arterial hypertonia is to be regarded as a result of the greater strain thrown on the circulatory mechanism. 6. Cyanosis, when this occurs, is probably due to inadequacy of the series of compensatory changes which, according to his view, precedes it.

12. **Operation for Adenoids and Enlarged Tonsils.**—The practical points to which Carlé calls attention are as follows: The horizontal position of the patient in the dorsal decubitus, the head being neither flexed nor extended. With the head extended the cervical curve of the spinal column is increased; in this position the operator is liable to cut deeply into the muscular structures of the posterior pharyngeal wall, which will be stripped down by the curette, leaving extensive tags of muscle and mucous membrane. These will slough and give rise to unpleasant symptoms in the after-treatment, so making the patient more liable to acute middle-ear inflammation, a not infrequent result of the operation for adenoids. The lateral position favors the drainage of blood from the pharynx out through the mouth and in no way inconveniences the surgeon in removing the tonsils. In removing the tonsils a small guillotine is better than a large one, since the encircled organ is not so liable to slip out of the smaller ring. The lower end of the tonsil hangs down into the pharynx and does not merely project from between the faucial pillars. In removal, therefore, it is important to get the lower edge of the guillotine ring below this projection, and to thread the ring on to the tonsil from below upward. The posterior pharyngeal wall is best cleared at the end of the operation by scraping with the finger nail from below upward, thus avoiding tearing downward of the posterior pharyngeal wall as is liable to follow the use of a curette. Large buried tonsils are best dealt with by removing a thin slice, followed by breaking down of the tonsil. The cicatricial contraction following this method of procedure markedly reduces the size of the hypertrophied organ. The results obtained by the above method of operating are eminently satisfactory, any after ill-effect rarely occurring.

13. **Anatomic Peculiarities of a Gall Bladder and An Appendix.**—Lemon reports an incident of inclusion of a gall bladder in the substance of the liver. After opening the abdomen the liver presented itself in the operation wound, and what appeared to be a hydatid cyst was seen on the anterior surface of the right lobe—a slightly rounded elevation of pale yellowish color. On lifting the liver forward a similar though somewhat more projecting eminence appeared on the posterior surface which, when viewed through the substance of the liver, was quite translucent. It was in the normal position for a gall bladder, but the surfaces, both anterior and posterior, were continuous with the liver substance. As no gall bladder could be discovered, an incision was made on the posterior surface into the swelling, when bile gushed out, and on further exploration two large gallstones, one barrel-shaped and

the other conical, were secured; there was an additional facet on the barrel-shaped stone, showing that a third stone had been present, but as a probe passed the whole length of the common duct without striking one, it had evidently been passed previously. The edge of the incision into the gall bladder at the time of operation was at least three-eighths of an inch thick, the circularly arranged coat of the gall bladder being marked off very definitely from the liver substance on the one hand and from the mucosa, etc., of the bladder on the other. At another operation for appendicitis, a divergence from the normal was seen in the appendix. On lifting the cecum into view a small elevation on the anterior surface of the cecum, about five inches from the extremity of the gut, was seen, from which a little pus oozed. At first sight it looked like a perforation of the cecum itself, as no trace of the appendix connected with it could be seen; but on further examination a little loop of appendix with a diameter of half an inch sprang from the extremity of the gut and, passing upward, appeared to end in the cecum half an inch away from its origin. No elevation appeared on the smooth peritoneal surface to indicate that the loop had any connection with the perforated elevation four and a half inches distant. Taking the loop as a guide, however, and carefully dissecting away the peritoneum, the appendix was traced till it ended in the elevation. The appendix was then stripped off the cecum and removed in the ordinary manner. The exposed surface beneath was the muscular tissue of the cecum, and it bled freely. After careful application of a continuous suture of fine catgut through the free edges of the peritoneum, including some of the muscular layer, the bleeding was stopped, and for further security a second row of sutures was inserted, invaginating the first, and including the stump of the appendix. The abdomen was then closed.

Semaine Médicale, Paris.

16 (XXV, No. 19.) Des effets mécaniques de l'hypertension sur le système cardio-aortique. H. Vaquez.
17 Report of XXXIV German Congress of Surgery, Berlin, April 26-29. (Commenced in No. 18.)
18 (No. 20.) Gaseous Tumor Protruding Above and Below the Clavicle.—Cas de tumeur gazeuse sus et sous-claviculaire. A. Chauffard and L. Laederich.

Berliner klinische Wochenschrift.

19 (XLII, No. 17, April 24, 1905.) Hydrotherapie und funktionelle Störungen der weiblichen Genitalorgane (and functional gynecologic affections). Koblanck.
20 *Die Stellung eines Sauerstoffatmungsapparatus in der Therapie (apparatus for inhalation of oxygen). H. Brat.
21 Zur Lehre vom Hermaphroditismus. E. Unger.
22 Adenoma of Testicle and Ovary in Hermaphrodites.—Ueber Adenome der männlichen und weiblichen Keimdrüse bei Hermaphroditismus verus und spurius. Nebst Bemerkungen über das endometriumähnliche Adenom am inneren weiblichen Genitale. L. Pick.
23 Diagnostik der chirurgischen Nierenerkrankungen (kidney affections). J. Vogel.
24 (No. 18.) Ueber einige seltener vorkommende peripherische Lähmungen (rare peripheral paralyses). M. Bernhardt.
25 Ueber aktive Lymphocytose und die Mechanik der Emigration. O. Israel.
26 Kidney Surgery Since Ureters Have Been Catheterized.—Rückblick auf die Nieren-Chirurgie seit Einführung des Ureteren-Katheterismus. L. Casper.
27 Ueber die Kelling'sche Serum-Reaktion bei Carcinomatösen. E. Fuld.
28 Reform of Modern Watering-Place Methods.—Das moderne Bäderwesen und seine Reform. Ebstein.
29 Zur Behandlung der epidemischen Genickstarre (advantages of sodium iodate in cerebrospinal meningitis). J. Ruhemann.
30 Balneotherapy for Children.—Ueber Badekuren im Kindesalter. O. Huebner. (Commenced in No. 17.)
31 Ueber die neueren Methoden der Lokal-Anästhesia. Hildebrandt.

20. **Apparatus for Inhalation of Oxygen.**—In presenting this apparatus, Brat emphasizes the importance of inhalation of oxygen in certain forms of industrial poisoning, etc.

Deutsche medicinische Wochenschrift, Berlin and Leipsic.

32 (XXI, No. 15.) Asthma cardiale und Angina pectoris. A. Fraenkel. Clinical lecture.
33 *Die lokale Immunität der Gewebe und ihre praktische Wichtigkeit (local immunity of tissues). A. Wassermann and J. Citron.
34 Ueber hemophile Bacillen. C. Klieneberger.
35 *Die Klangleitung in der Lunge und ihre diagnostische Verwertbarkeit (conductibility of resonance in lungs). R. von den Velden.
36 *Klinische Untersuchungen über die Viskosität des Blutes bei Störungen der Kohlensäureausscheidung (viscosity of blood with disturbances in elimination of carbonic acid). J. Bence (Koranyi's clinic, Budapest).
37 Behandlung des Scharlach mit Antistreptococcen-Serum (scarlet fever). F. Ganghofner. (Commenced in No. 14.)
38 Oxygen Inhalation Apparatus.—Ueber einen neuen Sauerstoffatmungsapparat. H. Brat. See 20 above.
39 (No. 16.) See page 1815.
40 (No. 17.) *Importance of Roentgen Rays for Surgery.—Bedeutung der R.-Strahlen für die Chirurgie. J. v. Mikulicz.
41 *Die Verwendung der Roentgen-Strahlen im Kriege (in war). Schjerning.
42 *Results of Roentgen Rays in Internal Medicine.—Ergebnisse der R.-Strahlen für die innere Medizin. T. Rumpf (Bonn).
43 *Roentgen Rays in Obstetrics and Gynecology.—Bedeutung der R.-Strahlen für die Geburtshilfe und Gynäkologie. H. Freund.
44 *Id. in der Dermato-Therapie. H. E. Schmidt.
45 *Id. für die Kinderheilkunde (for pediatrics). P. Reyher.
46 *Id. im Dienste der Zahnheilkunde (in stomatology). W. D. Miller (Berlin).
47 Id. in der Anatomie. K. v. Bardeleben (Jena).
48 Die Entwicklung der Technik des Roentgen-Verfahrens (evolution of technic). M. Levy-Dorn (Berlin).
49 Erfahrungen über 1,000 Operationen der Appendicitis. H. Kümmell (Hamburg). (Commenced in No. 26.)

33. **Practical Importance of Local Immunity of Tissues.**—Wassermann has been studying anew the local production of antibodies which follows local contact with certain germs. This local immunity acquired by the tissues in time, he thinks, is due to a transformation of the cells involved, and is an important fact in the study of immunity in general. Permanent or long-continued immunity is possible only when living germs are used for the inoculations. This immunity is not identical with "serum immunity." It has been established recently that there is no direct connection between the experimental virulence of a micro-organism for an animal species and its capacity to induce spontaneously an epidemic among animals of this species.

35. **Auscultation of Conducted Sounds.**—The percussion is the usual finger method, but is applied by an assistant, and the physician listens on the other side of the body, directly opposite. The findings by this technic are analyzed and compared with the results of other means of investigation, showing its advantages.

36. **Viscosity of Blood and Carbonic Acid.**—Bence found that the blood is more viscid the more carbonic acid it contains. The latter alters the size and surface of the red corpuscles, and the blood consequently becomes more viscid. In this condition it imposes extra work on the heart.

40. **Roentgen Rays and Surgery.**—Mikulicz surveys the whole field of the application of the Roentgen rays in surgical affections and conditions. In regard to treatment, he thinks that superficial cancers are the only ones that we can yet expect to cure with this agent. He has never witnessed a curative reaction in case of sarcoma, but the experience of others has demonstrated that certain varieties of sarcoma are probably curable by this means. He has observed the complete disappearance of the infiltration in several cases of scleroma and of the tumors in pseudoleukemia, and the prospects are bright for further progress in this line.

41. **Roentgen Rays and Military Surgery.**—Schjerning gives an illustrated description of his Roentgen-ray wagon for use on the field.

42. **Roentgen Rays in Internal Medicine.**—The main points in this address were summarized in the account of the Roentgen Congress on page 1544.

43. **Roentgen Rays in Obstetrics and Gynecology.**—Freund recapitulates his previous communications on the application of the Roentgen rays in the diagnosis of pregnancy, of extrauterine or twin gestations, estimation of the size of the pelvis, etc., and differentiation of tumors. An illustration of his apparatus is given. The movements of the fetus may prove a disturbing factor, but, as the technic is perfected and length of exposures shortened, the results will be more reliable. The Roentgen findings may be able to reveal deformities in the fetus and morbid conditions in kidneys, spleen or other organs. In gynecology the rays are useful in detecting foreign bodies, calcification and concrements.

44. **Roentgen Rays in Dermatotherapy.**—Schmidt states that the first 3 cases of rodent ulcer treated with the Roentgen rays at his clinic have shown no signs of recurrence since the

lesion was cured by the exposures from twelve to eighteen months ago. Especially favorable results have been obtained with the rays in treatment of recurring mammary cancers. The cases of lupus with flat, distinct nodules on a level with the skin have proved resistant to the rays, as a rule, but the other varieties have been remarkably favorably influenced, as also lupus erythematodes, favus, sycosis, trichophytosis, acne keloid, papillary dermatitis, psoriasis, eczema, chronic lichen, hyperidrosis manuum, and the verrucous form of lichen ruber. Verrucæ shrivel and vanish without leaving a trace, under exposures which cause merely a slight erythema on sound skin. In some of the above affections the *x*-ray treatment should be reserved only for the more rebellious cases, as in psoriasis and eczema.

45. **Roentgen Rays in Pediatrics.**—Reyher reviews the diagnostic findings in pathologic conditions in children with Roentgen examination. The therapeutic indications he dismisses with the brief statement that symptomatic benefit has been derived in leukemia and pseudoleukemia.

46. **Roentgen Rays in Stomatology.**—Miller gives illustrations of various pathologic processes inaccessible to all other means of investigation which the Roentgen rays have revealed in all their details. He does not write from personal experience, as he remarks that the official university dental institute at Berlin, where he is professor, has absolutely no room for installing a Roentgen equipment.

Münchener medicinische Wochenschrift.

50 (LII, No. 15, April 11.) *Ueber Herz-Dilatation (of heart). F. Moritz. Ueber Herz-Dilatation bei Diphtherie. H. Dietlen.
51 *Zur Aetiologie der Eklampsie. W. Liepmann.
52 *Action of Roentgen Rays on Blood.—Experimentelle Untersuchungen über die Einwirkung der Röntgenstrahlen auf das Blut. E. Helber and P. Linser.
53 *Zur chemischen Imitation der biologischen Strahlenwirkung (action of rays). R. Werner.
54 Behavior of Substances Involved in Precipitation in Respect to Photodynamic Substances.—Die bei der Präzipitation beteiligten Substanzen in ihrem Verhalten gegenüber photodynamischen Stoffen. P. Fleischmann.
55 *Die Prophylaxe des Ohres bei den akuten Infektionskrankheiten (prevention of ear complication). Ostmann.
56 *Results of Sanatorium Treatment of Pulmonary Tuberculosis. —Die Erfolge der Heilstättenkuren bei Lungenschwindsüchtigen. F. Reiche.
57 Zur Technik der Gruber-Widalschen Reaktion. E. Schottelius.
58 Ein für die Praxis geeignetes Besteck zur Anstellung der Gruber-Widalschen Reaktion mit dem Fickerschen Typhusdiagnostikum. Martineck.
59 Case of Traumatic Laceration of Sound Pulmonary Valve.—Ueber traumatische Herzklappenzerreissung. E. Fraenkel (Hamburg).
60 Arznei-Exanthem nach Aspirin. R. Freund. Three cases.
61 Protection During Examination of Upper Air Passages.—Eine Schutzvorrichtung für den Arzt bei der Untersuchung der oberen Luftwege. H. Neumayer.
62 *New Sieve for Stools.—Ein neues Sieb für Fäzesuntersuchungen. R. E. Schütz (Wiesbaden).

50. **Acute Dilatation of Heart.**—Moritz does not believe that acute dilatation of any extent can occur in a sound heart. When the sound organ has extra demands made on it by overexertion or emotion it may increase a little in size, but within narrow limits, and it soon subsides to normal after removal of the exciting cause. Whenever there is considerable increase in the size of the heart, which does not subside to normal soon afterward or does so very slowly, not until after days or weeks, the heart must be regarded as pathologic. Even his "orthodiagraphy" (mentioned on page 1826 of the last volume of THE JOURNAL) has failed to confirm the occurrence of any appreciable acute dilatation after physical exertion, after ingestion of alcohol, or hot baths, narcotic or other medication, chloral, chloroform, caffein or kola. It has revealed, however, that the outline of the heart is smaller in the upright position than when the subject reclines. An interesting field for research is opened by "orthodiagraphy" of the dilated heart to note the influence on it of rest in bed, of digitalis, of carbonated baths, of electric or carbonated baths and of gymnastics, etc.

Dietlen states that he has examined 47 out of 65 diphtheria patients with the aid of Moritz' orthodiagraph, the subjects reclining, and found that 20 of these 47 presented evidences of myocarditic phenomena. In 15 of this group (75 per cent. of the cases of myocarditis and 32 per cent. of the total number), dilatation of the heart was unmistakably apparent when examined with the orthodiagraph. The myocarditis of diphtheria made its appearance in the first half of the second week of the disease. It entails a gradual dilatation of the heart, accompanying the progress of the myocarditis and reaching its acme with the height of the latter, usually in the third week, sometimes even before the pulse shows any irregularity. It is generally accompanied by a diffuse apex beat, visible heart beat in the second, fourth, or seventh interspace, with accentuation of the second pulmonary sound, and frequently with a blowing systolic murmur. This dilatation generally retrogresses, mostly by the fourth week, from eight to fourteen days after it has reached its height. The retrogression was complete in only 2 out of the 14 cases; in the others the heart merely retrogressed to about half of the dilatation. Any further subsidence after the children had been dismissed was not followed. The changes in the pulse are no criterion as to the extent of the dilatation, and slight degrees of the latter escape detection by percussion. The orthodiagraph is proving a valuable aid in the study of such cases. Even extreme degrees of dilatation are liable to retrogress, so that the prognosis is not necessarily bad, but the sight of these excessively dilated hearts, with their muscular walls stretched so thin, is an impressive warning as to the danger to which the subjects are exposed from threatening paralysis of the heart. Such patients should not be allowed to leave their bed until the dilatation has retrogressed entirely or at least to a considerable degree.

51. **Etiology of Eclampsia.**—Liepmann has been experimenting with rabbits injected with extract of placentæ from cases of eclampsia, hoping to obtain a curative serum in this way. He found that all the rabbits thus injected rapidly succumbed with symptoms of severe intoxication. This has convinced him that the source of eclampsia must be sought in the placenta. Normal placentæ are entirely harmless for rabbits. He appeals to his colleagues to send him the placentæ from all the cases of eclampsia they encounter. The placenta should be wrapped in a linen cloth saturated with toluol and should be as fresh as possible.

52. **Action of Roentgen Rays on the Blood.**—The conclusions of this communication from Romberg's clinic at Tübingen are that the Roentgen rays have an elective injurious action on the leucocytes. The nuclear substance suffers most. The lymphocytes are injured first and most by the action of the rays. The white corpuscles are destroyed in the circulation as well as in the blood-forming organs. The rays have but little action on the reds, on the blood plates and on the hemoglobin. After exposures to the Roentgen rays the kidneys showed injury not the result of the direct action of the rays on these organs. Acute nephritis was manifest in all the rats, rabbits and dogs that had been exposed to the rays in these tests.

53. **Chemical Imitation of Biologic Action of Rays.**—Werner reports experiments with radioactivated lecithin which presented effects similar to those of radium itself. Further experiments demonstrated that results could be obtained when the lecithin was ozonized the same as when it was radioactivated. Cholesterin and turpentine could be ozonized and then they behaved like radioactivated substances. These results and others which he describes suggest the probability that the biologic action of these substances is due to their oxygen factor, and that the splitting off of the oxygen is the process common to both the radium and the chemical imitations. It is possible that not only the biologic but the therapeutic action of the rays can be imitated in this way to good effect.

55. **Prevention of Ear Complications in Acute Infections.**—Ostmann calls attention to the increasing danger of extension of the infection into the middle ear when the child grows thin, and the opening into the Eustachian tube thus becomes wider than under normal conditions. In children this tube is very short, which further favors propagation of the infectious process in the throat, the inevitable accompaniment of measles, scarlet fever, whooping cough, influenza, etc. This

propagation is almost certain in case of preceding catarrhal conditions or of adenoid vegetations. Children should be trained to blow their nose on one side, with a vigorous but not violent effort. They should also be trained in gargling and in the technic of rinsing the nasopharynx. The nose of the sick child should be kept clean and open, with a cocain-boric acid spray in case of severe catarrhal conditions, with careful toilet of the mouth and throat, three or four times a day. By this means, renewed infection from the throat is prevented; removal of the exudate relieves the ear, and if there is an opening in the tympanic membrane, mixed infection is averted. The thinness of the child during convalescence requires the continuance of the prophylactic measures as the opening into the Eustachian tube remains abnormally large until normal plumpness is regained. Any unusual pressure in the nasopharynx must be carefully avoided. One of the severest cases of bilateral otitis media that he has ever encountered was in a patient who had apparently entirely recovered from a diphtheritic sore throat, but immediately after playing a cornet the severe ear affection developed. Blowing the wind instrument had evidently forced the bacilli into the middle ear on both sides.

56. **Results of Sanatorium Treatment of Tuberculosis.**—Reiche has traced the 2,697 tuberculous persons referred to him for decision as to the suitability of sanatorium treatment. Out of this total, 1,842 persons were received into various sanatoria for four weeks or more. The first symptoms of the disease were depression and pains in the back and chest in the female patients, most of them anemic, while in the men the disease had usually progressed beyond the incipient stage before their attention was called to its existence by coughing or spitting blood. Of the 2,697 patients, 984 recovered full working capacity. The duration of the disease before treatment seems to be immaterial. Success seems to depend more on the strength of the resistance offered by the patient. The long, shallow thorax was encountered in 35 per cent. of the total 2,697, but the proportion was only 13.1 per cent. among the male and 19.3 per cent. among the female patients dismissed as cured. These figures point to more than a casual coincidence.

62. **New Sieve for Feces.**—Schütz has examined more than 1,200 stools, and has modified Boas' sieve by passing the material through three superposed sieves, the finest the lowest. The water pours into the sink outside the sieves, and thus enters them rising from below. The outlet in the bottom of the sink is kept closed while the stool material is soaking.

Virchow's Archiv, Berlin.

Last indexed XLIII, page 1825.

63 (CLXXVIII, No. 1.) Welchen Aufschluss geben Bau und Anordnung hyperdaktyler Gliedmassen über die Aetiologie und die morphologische Bedeutung der Hyperdaktylie des Menschen. E. Ballowitz.
64 Kongenitale Divertikel Bildung im Processus vermiformis. E. Hedinger.
65 Origin of Blood Plates.—Ueber die Abstammung der Blutplättchen. K. Preisich und P. Heim.
66 Epithelcysten zwischen Steissbein und Rectum bei einem Fötus. H. Ribbert.
67 Ueber die Regeneration der Schleimhaut der Harnblase in Beziehung zur operativen Behandlung der chronischen Cystitis (regeneration of bladder mucosa). G. Lasio.
68 *Experimentelle Beitrage zur Lehre von dem latenten Mikrobismus. A. Wrzosek.
69 Zur Aetiologie der Orientbeule (bouton d'Orient). E. J. Marzinowsky.
70 Paget's disease und sein Verhältnis zum Milchdrüsenkarzinom (mammary cancer). H. C. Jacobaeus.
71 Veränderungen in dem Nerven-System beim plotzlichen Uebergang vom hohen zum normalen Barometer Druck. H. P. Lie.
72 *Zur Kenntnis des Ertrinkungstodes (drowning). E. Margulies.
73 Das Verhalten der Ossa sesamoidea an den Spaltgliedern bei Hyperdaktylie des Menschen. E. Ballowitz.
74 Synthesis of Fat in "Surviving Organs." F. Hagemeister. Reply to Fischler.

68. **Latent Microbism.**—Wrzosek has been conducting extensive researches on animals to determine whether microbes can be found in the internal organs under normal conditions. His conclusions are affirmative and that most of the microbes find their way from the intestinal canal. He affirms that the animal organism is thus incessantly infecting itself from birth to old age. This latent microbism is liable to flare up into disease when the normal resistance of a part is reduced from any cause. This physiologic infection of the organism, the latent microbism in the tissues, is the key that solves many puzzling cases of acute traumatic osteomyelitis, etc., of primary tuberculosis of the kidney, of suppurative meningitis after long exposure to the heat of the sun, of traumatic tuberculosis of bones, joints and testicles, or of tardy suppuration of a retrouterine hematoma. The details of the various tests are given. Microbes were cultivated from the spleen in 7 out of 28 animals; from the liver in 5 out of 30; from the lungs in 8 out of 15; from the mesenteric glands in 9 out of 17; from the kidneys in 4 out of 21; from the bile in 0 out of 21; from the bronchial glands in 5 out of 10, and from the bone marrow in 5 out of 28. In 47 warm-blooded animals, in which various microbes had been introduced into the digestive tract, the microbes were cultivated again from the internal organs in all but 17 of the animals. They were found in the mesenteric glands, kidney and other internal organs. The positive results were most numerous in dogs and rarest in rabbits.

72. **The Lungs of a Drowned Person.**—It has been established that the lungs of a drowned person are usually much distended, and this distension has been accepted as a sign of death from drowning. Margulies has been experimenting with rabbits and found that when the animal sank into the water just after a deep inspiration the air in the lungs could not escape. The lungs were found much distended although they weighed scarcely any more than the undistended lungs of control animals drowned after an expiration instead of inspiration. The difference between deep expiration and deep inspiration in an adult is said to be about 3,700 c.c. of air. This represents a difference in weight of more than seven pounds, that is, a person sinking after a deep inspiration is seven pounds lighter than when he sinks after a deep expiration. Margulies believes that the shock of the cold water and other circumstances cause a deep inspiration as one enters the water. The air thus taken in can not be expelled if one is completely submerged, and the lungs remain distended. Distension of the lungs is, therefore, a sign that the person was alive when he entered the water.

Zeitschrift f. Geb. und Gynäkologie, Stuttgart.

Last indexed page 1076.

75 (LIV, No. 1.) Zur Anatomie und Physiologie der Nabelgefässe (umbilical vessels). J. Bondi.
76 *Fate of Relics of Ovarian Tumors.—Ueber das spätere Schicksal von Implantationen und zurückgelassenen Tumorresten nach Ovariotomien. H. Schroeder.
77 Study of Elements at Point of Embedding of Ovum.—Ueber das Verhältnis von mütterlichen und kindlichen Elementen an der Einnistungsstelle jungerer menschlicher Eier. J. Volgt.
78 *Spontaneous Correction of Retrodisplacement. Ueber die spontan eintretende Aufstellung des mobilen retrodevilerten Uterus. L. Kleinwächter.
79 Changes in Omentum with Tubo-abdominal Pregnancy.—Ueber deziduale Veränderungen im Netz bei tuboabdominaler Schwangerschaft. M. Penkert.
80 Zur Exstirpation der Pankreas-Zysten. A. Sitzenfrey.
81 *Zur instrumentellen direkten Messung der Conjugata obstetrica (measurement). C. J. Gauss.
82 *Influence of Preliminary Cleansing of Vagina on Puerperal Morbidity.—Hat die präliminäre Scheidenreinigung einen Einfluss auf die Wochenbettsmorbidität? F. Ahlfeld.
83 *Prevention of Great Loss of Blood After Childbirth.—Zur Verhütung grösserer Blutverluste in der Nachgeburtsperiode. F. Ahlfeld.

76. **Fate of Relics of Tumors.**—Schroeder relates the particulars of three instructive cases. In one an inoperable part of a serous cystadenoma was left behind at the operation, and it continued to grow. A communication was opened between it and the posterior vagina. The patient has been comparatively well, but granulations around the fistula have required curetting occasionally in the three or four years since. The growth has retained its benign character. In another patient general carcinosis of the peritoneum developed from implantation of relics of a benign tumor left at the time of its removal. Similar cases of incomplete ovariotomies from the literature are analyzed. Undetachable adhesions set a limit to extirpation of ovarian tumors. Occasionally a second attempt will succeed when a first failed, but, generally, the conditions are still more unfavorable at the second trial. In a third case taxis of a tumor during childbirth resulted in its

rupture. This case is another argument in favor of prompt removal of an ovarian tumor during pregnancy. It is impossible to determine whether it will prove malignant or not, and its extirpation removes the danger of formation of adhesions with consecutive infection and rupture. If first discovered during parturition the tumor, if impacted in the pelvis, should be removed through the vagina, carefully avoiding taxis. The removal of larger tumors, close to or above the uterus, which do not interfere with delivery, should be postponed to the end of the puerperium, or ovariotomy may be done at the same time as Cesarean section. This is indispensable if the tumor in the pelvis is a solid fibroma or an intraligamentary cyst too large to remove through the vagina or inaccessible by this route.

78. **Spontaneous Correction of Retrodisplacement.**—Kleinwächter states that in 41 out of 366 cases of retrodeviation of the uterus in his experience, the organ spontaneously returned to its proper place without pessary or other treatment. In 10 other cases the uterus was restored to position by some pathologic process drawing it up into place—a fibromyoma, ovarian cyst—or by spontaneous correction after amputation of the abnormally long cervix. He has thus witnessed spontaneous, natural corrections in 11.2 per cent. of his total cases.

81. **Obstetric Measurements.**—Gauss has been giving von Bylicki's method of instrumental measurements a thorough trial. He has found it very simple and extremely satisfactory, and suggests a few modifications which render it still more useful. Bylicki's measure was illustrated in the *Monatss. f. Geb.*, vol. xx.

82. **Preliminary Cleansing of Vagina and Puerperal Morbidity.**—Ahlfeld's curves show a marked increase in the number of non-febrile confinements since the vaginal douches have been reintroduced. Bacteriologic tests also show improvement.

83. **Prevention of Much Loss of Blood Postpartum.**—Ahlfeld accepts 600 to 800 gm. of blood as the normal amount that accompanies the birth of a child weighing seven or eight pounds. The placenta has a larger surface in case of large children, and it is liable to obstruct the inner os. This causes the body of the uterus to become distended by the accumulating blood, and a condition of atony is liable to result. He relates a few instances illustrating this fact. In one, the placenta weighed 635 gm. and measured 21 by 19 cm. The blood accumulated behind it as it obstructed the opening, and could not escape until the placenta was removed. If expression had been undertaken earlier, before the internal os had contracted too much for the exceptionally large placenta to pass, the atony of the uterus might have been prevented. Ahlfeld advises more frequent control of the condition of the body of the uterus after delivery of extra large children. If the umbilical cord is drawn inward into the vagina when the uterus is pushed up, then expectant treatment must be abandoned and the placenta be removed at once. Few realize the importance of the information to be derived from the protruding umbilical cord. He has the second ligature applied to the cord close to the vulva, so that the progress of the placenta can be estimated from the change in the position of the ligature. If the ligature remains close to the vulva, or if it is drawn backward into the vagina when the uterus is pushed up, this indicates that the placenta is being retained in the cavity of the uterus, and early expression is called for. Even if the amount of hemorrhage does not demand immediate expression, the physician and midwife under such circumstances should not wait more than half an hour before resorting to Credé's maneuver to expel the placenta.

Zeitschrift f. klinische Medizin, Berlin.

Last indexed page 187.

84 (LVI. Nos. 5-6.) Weitere Untersuchungen über Eiweiss-Präcipitine (of albumin). L. Michaelis (von Leyden's clinic, Berlin).

85 *Zur Kenntniss der sporadischen einheimischen Dysenterie. A. Albu (Berlin).

86 *Extent of Digestion of Albumin in Stomach.—Ueber den Umfang der Eiweissverdauung in menschlichen Magen unter normalen und pathologischen Verhältnissen. E. Rosenberg.

87 *Zur Lehre von der Morvan'schen Krankheit und die Entstehung der Höhlen im Rückenmark (Morvan's disease). W. Sterling (Flatau's clinic, Warsaw).

88 *Zur Frage der hepatogenen Lävulosurie. E. Sehrt (Senator's clinic, Berlin).

89 *Remarkable Dilatation of Heart and Loss of Function of Auricle.—Ungewöhnliche Dilatation des Herzens und Ausfall der Vorhofsfunktion. G. Müller (Minkowski's clinic, Cologne).

90 *Behavior of Bone-Marrow Cells in Various Diseases.—Verhalten der Knochenmarkszellen bei verschiedenen Krankheiten. B. Wolownik.

91 *Elimination of Chlorin in Urine and Its Relation to the Digestive Processes.—Die Chlorausscheidung im Harn und ihre Beziehung zu den Verdauungsvorgängen. A. Müller and P. Saxl (Nothnagel's clinic, Vienna).

85. **Sporadic Dysentery in Germany.**—Albu describes the history and findings in the case of a robust young woman who succumbed to chronic marasmus, the result of an acute dysentery. She resided in Berlin and was taken sick after a trip to Silesia and Breslau. The intestines showed the necrotic processes characteristic of tropical dysentery, and the true dysentery ameba, Schaudinn's histolytic ameba, was cultivated from the stools.

86. **Extent of Digestion of Albumin in the Stomach.**—Among the various facts established by Rosenberg is the remarkable property displayed by the cancerous stomach to form such amounts of nitrogenized residue out of the albumin in such a short time. The average in case of cancer of the stomach was 51 per cent., while with hyperacidity it was 39 per cent., in normal conditions 30 per cent., in chronic gastritis 28 per cent., and in achylia 27 per cent. The higher the acidity, the more extensive the splitting of the dissolved albumin, and the more the nitrogen surpasses the limits of the albumoses. Digestion proceeds in the stomach much more rapidly and effectually than in artificial peptic digestion. This was confirmed again and again by his tests with casein. Not the slightest diagnostic features could be discovered in the tryptophan reaction. The particulars of the various tests on 40 subjects are given in tabulated form, as carried out in Albu's clinic for internal diseases and in Salkowski's chemical laboratory.

87. **Morvan's Disease.**—Sterling had occasion to study during life and postmortem a typical case of analgesia with paresis of the arms and trophic lesions, that is, Morvan's disease. He reviews the literature on the subject and theorizes to explain the origin of the cavities in the spinal cord which he believes are concerned in the etiology of the affection.

88. **Levulosuria of Liver Origin.**—Sehrt reports a number of experiments with desiccated pulverized internal organs from slaughtered cattle. The chopped organs were soaked for ten minutes in four times the volume of acetone and then drained and the residue dried and pulverized. One gram of this powder was mixed with 50 c.c. of a solution of dextrose or levulose in an Erlenmeyer jar. The sugar-destroying action of the organ powder was then determined. The results showed that the co-operation of two organs is necessary for any decided destruction of grape sugar in the animal organism—admitting that the results of laboratory experiments *in vitro* can be applied to the living organism. The two organs required are the pancreas and muscle. The pancreas alone has but a feeble glycolytic power. The combination of pancreas and muscle, and tests with other organ powders, thyroid, suprarenal and combinations of them, failed to show any sugar-destroying power for levulose, but a mixture of liver and salivary gland powders always demonstrated a slight activity in this respect, and were the only ones that did. The apparatus in the body that takes charge of the levulose must be independent of the musculature and more isolated than the apparatus that serves for the destruction of dextrose. Even the slight levulose-destroying power evinced by the liver he regards as a suggestive fact.

89. **Case of Remarkable Dilatation of Heart.**—In Mueller's case of mitral stenosis the patient weighed 65 kg. and the heart weighed 620 gm. The normal proportion is a heart of 297.2 gm. for a weight of from 60 to 70 kg. There was no increase in the size of the left ventricle; the left auricle was larger than a child's head. The patient died at the age of 39, but had continued at his trade of mason until shortly before death. The first heart symptoms had been noted fourteen years previously. The heart beat was apparently regular, as

the ventricle had evidently assumed the function of the rhythm.

90. **Bone Marrow in Various Infectious Diseases.**—Wolownik summarizes as follows the results of his research on a number of patients with various infectious diseases or neoplasms. The predominantly myelocytic type was found in tuberculosis, in sepsis, pyemia, heart affections, nephritis and carcinoma. The lymphocytic type was found in pneumonia, with cirrhosis of the liver, and in morbid conditions involving the lymph glands. There was a constant parallel between the numbers of the large lymphocytes and of the myelocytes. The polynuclear neutrophiles were most numerous in cases with suppuration or ulceration. The eosinophiles were most numerous in pneumonia and in nephritis. When they were encountered in large numbers in other diseases, the kidneys were usually involved in the morbid process. In tuberculosis and carcinoma the giant cells and the normoblasts were materially increased. Megaloblasts were observed in very small numbers in one case of nephritis and in certain cases of carcinoma. He regards the constancy of these findings as suggestive, but remarks that much wider experience is required before they can be accepted as fully established.

91. **Elimination of Salt in Urine and Its Relation to the Digestive Processes.**—Forty-one curves are given showing the elimination of sodium chlorid, and of the other solid matters and the proportions between them at various periods during the day, especially with reference to the meals. The tests were made on healthy persons and on patients with various affections. The influence of the mealtimes is apparent at a glance, sending the elimination up in sharp peaks, while as soon as digestion commences, immediately after the meal, the elimination drops abruptly very low. This is due to the retention of the chlorin for the production of hydrochloric acid. When the production of hydrochloric acid is defective, then less chlorin is retained and the drop is not so abrupt nor so low. It may be possible by thus inspecting the periodical elimination of salt in the urine to detect pathologic alteration of the gastric secretions. The curves show distinctly that in case of complete achylia or of cancer of the stomach there is no decline in the amount of chlorin eliminated while digestion is in progress. It would be more difficult to draw diagnostic conclusions in case of less marked hyposecretion or hypersecretion, as the curves are not sufficiently characteristic except for extreme conditions; they vary normally within somewhat wide limits. As a test for the rapidity and amount of absorption in stomach or intestines, this method of determining the elimination of salt has the advantage that it utilizes a substance which is a physiologic element of the diet. Observation of the time when the intestinal absorption commences throws light on the motor functions of the stomach. Assuming that a pint of .4 per cent. HCl is produced in the stomach after dinner, this corresponds to 3.3 gm. of sodium chlorid. This represents about a third of the amount of salt eliminated daily in the urine. It is drawn from the blood very rapidly, in order to aid in the production of the gastric juice, and is restored to it again very slowly by absorption from the stomach, and later quite rapidly as the intestines absorb it. At the acme of intestinal absorption the blood contains an excess of sodium chlorid and the curve of its elimination rises abruptly. It is thus able to throw light on the vital processes of gastric juice production and of intestinal absorption.

Gazzetta degli Ospedali, Milan.

Last indexed page 1410.

92 (XXV, No. 151.) Contributo allo studio delle mioclonie (myoclonus). N. Soma.
93 Alcune considerazioni sulla cura radicale dell'ernia inguinale. C. V. Teseo.
94 Contributo alla cura chirurgica delle retrodeviazioni dell utero. F. Orta.
95 Contributo alla casistica delle ernie della tuba (hernia of fallopian tube). C. Clerici.
96 (No. 154.) Sull'iperglobulia tubercolare. C. Tarchetti.
97 Sulla possibilita della diffusione della tubercolosi per mezzo carni insaccate (in sausages). C. Tonzig.
98 *Reducing Power of Cerebrospinal Fluid.—Sul potere riduttore del liquido cerebro-spinale. A. Tonello.
99 Semplificazione del metodo Kjeldahl in chimica medica. E. Pittarelli.
100 (XXVI, No. 1.) Reazione di Justus. G. Pollo and A. Fontana.
101 Conservative Treatment of Sarcoma.—Cura economica dei sarcomi ed agli innesti tendinei. A. Cordero.
102 (No. 4.) Proportion of Hemoglobin in Blood Corpuscles.—Sul valore emoglobinico globulare. C. P. Goggia.
103 Experimental Evacuation of Suprarenal Capsules.—Smidollamento delle capsule surrenali in due tempi. E. Cioffi.
104 Gravidanza e nefrectomia. G. D. Fabbro.
105 (No. 7.) *Reducing Power of Urine in Pleurisy, etc.—Il potere riduttore delle urine nelle pleuriti, peritoniti e tubercolosi polmonare. A. Plessi.
106 *Iodin Treatment of Typhoid.—La cura iodica nel tifo. A Cerioli.
107 Nuovo autoclave a riscaldamento di vapore per piroscafi in servizio di emigrazione (for emigrant ships). C. Tarchetti.
108 (No. 10.) *"Occult" Gastrointestinal Hemorrhage.—Sull'importanza delle "emorragie occulte" del canale digerente. E. Tedeschi.
109 Sulla paralisi isolata ed unilaterale dell'oculomotore comune di origine sifilitica. G. Fazio.
110 Operative Treatment of Stiff Knee.—Contributo alla cura delle anchilosi angolari del ginocchio mediante l'osteotomia alla Gordon Buck. M. Capuano.
111 *Della cura medica dell'onichia laterale (ingrowing nail). A. Gasparini.

98. **Reducing Power of Cerebrospinal Fluid.**—Tonello tabulates the findings in the cerebrospinal fluid of 17 individuals, sick and well, infants and adults. The fluid was limpid in all, and the density was approximately the same, as also the proportions of albumin and chlorids. But in one point there was a marked difference between the various specimens. This was in respect to the reducing power of the fluid in regard to sodium hypobromid. In the cases of rickets this reducing power was very low, while in all the other cases it averaged much higher. The list included cases of sclerodermia, bronchopneumonia, nephritis and asthma.

105. **Reducing Power of Urine.**—Plessi relates the particulars of a number of examinations of the reducing power of the urine in health and disease. He thinks that this point has been too much neglected, as it may serve to characterize the progress of the disease. In tuberculosis the reducing power is augmented, but there does not seem to be any connection between it and the extent and gravity of the pulmonary lesions or the temperature.

106. **Iodin Treatment of Typhoid.**—Ceriolo states that typhoid is endemic where he lives, and his cases were always severe, the fever persisting high. One patient succumbed to pulmonary complications. Since he has begun to use iodin systematically in treatment his cases have all been mild. Even when the onset was stormy the disease rapidly assumed a mild course. He administered 7 cg. of iodin and 70 cg. of potassium iodid during the day, fractioned, with a quantity of water. He gave also from 15 to 20 cg. of quinin to retard the tissue breakdown and 50 cg. of sodium benzoate to favor elimination of waste. He briefly reviews the history of iodin in internal medication.

108. **Occult Gastrointestinal Hemorrhages.**—Tedeschi describes series of cases in which the presence of invisible amounts of blood was determined by the guaiac-aloin test. His findings confirmed Boas' assertions in regard to the great diagnostic value of these occult hemorrhages, especially in cases of latent cancer in stomach or intestine, in those of gastric ulcer presenting an atypical or incomplete clinical picture, and in chlorosis with a suspicion of ulcer in the stomach. The presence or absence of blood in the feces is often of the greatest value for diagnosis, treatment and prognosis in cases of ulcer and ankylostomiasis. The occult bleeding is often a premonitory symptom of serious hemorrhage in typhoid fever. In 3 cases of peritonitis accompanying typhoid fever the test was positive in 2 cases in which the peritonitis was known to be due to perforation, while it was negative in the one case of peritonitis from extension of the inflammation through the intestinal wall. If the findings of others confirm this experience, this occult bleeding may serve to differentiate perforation. He also noted that the occult bleeding was also an early sign of cirrhosis of the liver.

111. **Medical Treatment of Ingrowing Nail.**—Gasparini has found that copious application of dried powdered alum is sufficient to cure every case of ingrowing nail in his experience in about five days. The applications were never painful in the least, and the destruction of the pathologic tissue resulted in the formation of a hard, resistant and non-sensitive bed for

the nail, a perfect cure for the ingrowing tendency. The nontoxicity of the alum, its easy application and the fine results render it the chosen treatment for cases in which surgical intervention is not contemplated. He describes a series of cases and contrasts them with another series treated with other caustics with far less favorable and durable results. He applies a fomentation of soap and water for 24 hours beforehand and then pours the alum into the space between the nail and its bed, tamponing with cotton to keep the alum in place, and repeating the application daily. The suppuration rapidly dries up and pain and discomfort are relieved almost at once.

Revista de Medicina y Cirugia, Havana.

Last indexed pages 168 and 432.

112 (IX, No. 6.) Del tratamiento de las uretritis cronicas. R. Menocal.
113 (No. 7.) Consideraciones sobre la relacion fisiologica de los normoblastos con el higado y el bazo (with liver and spleen). J. F. Arteaga.
114 Medical Examination of Criminals; Prison Physicians.—El examen medico de los detenidos y los medicos de las prisiones. R. P. Vento.
115 (No. 8.) The Sechium Edulis as a Desirable Culture Medium.—El chayote como medio de cultivo en bacteriologia. E. Cuervo.
116 (No. 9.) Signos clinos que autorizan la nefrectomia. M. V. Bango.
117 (No. 10.) Via transpleural para las intervenciones del bazo (transpleural route for access to spleen). F. Dominguez.
118 (No. 11.) Puericultura. G. Arostegui.
119 Frogs as Food.—Las ranas como alimento. L. M. Cowley.
120 (No. 12.) La terapeutica de la sifilis. M. Duque.
121 Contribucion al diagnostico del carbunclo bacteridiano y del edema maligno. E. Cuervo.
122 (Nos. 13-15.) Creches.—Asilos cunas. L. M. Cowley.
123 Anatomia topografica de la region ceco-apendicular. J. F. de Poo.
124 Id. del duodeno. J. A. Taboadela.
125 Id. del estomago (stomach). G. Pedroso.
126 (No. 15.) Influence of Hysteropexy on Succeeding Pregnancies.—Influencia de la histeropexia sobre la evolucion y terminacion de los embarazos consecutivos. E. Nunez.
127 Sobre infecciones piohemicas. M. G. Lebredo.

Siglo Medico, Madrid.

128 (LII, No. 2,665, January 7.) *El tratamiento de la pustula maligna. D. J. G. Castro.
129 (No. 2,666.) El infantilismo en las enfermedades de la trompa (in affections of Fallopian tube). P. Martin. (Commenced in preceding number.)
130 (No. 2,668.) *Serotherapy in Treatment of Ulceration of the Cornea.—La sueroterapia como tratamiento de las ulceras supurativas de la cornea. B. Castresana. (Commenced in No. 2,667.)
131 Cold and the Tubercle Bacillus.—El frio y el bacilo tuberculoso. A. Correa.
132 (No. 2,669.) *Sphenoid Excision in Gasserectomy.—Escision esfenoidal de dentro afuera en la extirpacion del ganglio de gaserio. A. San Martin.
133 (No. 2,670.) Hydatid Cysts of Orbit.—Quistes hidatidicos de la orbita. R. D. Quartiellers.
134 (No. 2,670.) Public Health in Spain.—De la sanidad publica en Espana. M. L. Comas.
135 (No. 2,671.) Incision trilineal y resection romboidea en la toracoplastia. Algunos casos raros de cirugia toracica. A. San Martin.
136 (No. 2,673.) La pustula maligna y su tratamiento siempre eficaz por las inyecciones iodicas. A. M. Ayuso. (Commenced in No. 2,672).
137 Massage and Mobilization of Fractures.—El masage y la gimnasia medica en las fracturas. Tripels-Dentzkof.
138 Los grandes remedios. C. M. Cortezo. (Commenced in No. 2,670.)

128. **Treatment of Malignant Pustule.**—Castro writes that he has occasion to treat more than 50 cases of malignant pustule every year and has never lost a case. He follows the technic advocated by the Spanish physician, de Sande, which, he states, has never yet failed in countless experiences. One drop of a 4 per cent. solution of corrosive sublimate is placed on the pustule, and after it dries, another and another until five drops have been applied, waiting for each to dry before the next is added. Usually all the symptoms subside in from 12 to 24 hours, but occasionally it may be necessary to repeat the application the next day.

130. **Antipneumococcus Serum in Corneal Ulcers.**—Castresana is convinced that fully 95 per cent. of all corneal ulcers are the work of the pneumococcus. He has consequently been treating ulcers of this class with antipneumococcus serum, and relates that the majority of the patients were promptly cured. In 20 cases of suppurative keratitis with hypopyon, 16 were cured, 1 showed no improvement and 3 did not return to finish the course of treatment. The results were less favorable in 3 cases with multiple foci in which the affection continued its course to loss of vision in all but 1 case. The serum was injected under the conjunctiva and also instilled every four hours, supplemented by the usual measures.

132. **Technic of Gasserectomy.**—San Martin illustrates his technic and describes its application in 2 cases in the clinic. He saws through the sphenoid from within outward, using the Gigli saw. The operation proceeded without mishap, but the neuralgia was relieved in only one of the cases after extirpation of the Gasserian ganglion. Its persistence in the other case was followed by acute mania and death a few months later.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

A MANUAL OF PRACTICAL HYGIENE FOR STUDENTS, PHYSICIANS AND MEDICAL OFFICERS. By C. Harrington, M. D. Third Edition, Revised and Enlarged. Illustrated with Twelve Plates in Colors and Monochrome and One Hundred and Eighteen Engravings. Cloth. Pp. 793. Price, $4.25. Philadelphia: Lea Brothers & Co. 1905.

THE HISTORY OF THE MEDICAL DEPARTMENT OF TRANSYLVANIA UNIVERSITY. By Dr. R. Peter. Prepared for Publication by His Daughter, Miss Johanna Peter, Member of the Filson Club. Illustrated. Filson Club Publications No. 20. Paper. Pp. 193. Louisville, Ky.: John P. Morton & Co. 1905.

AN ATLAS OF DERMATOLOGY, Showing the Appearances, Clinical and Microscopical, Normal and Abnormal, of Conditions of the Skin. By M. Dockrell, M.A., M.D. Cloth. Pp. 264. Price, $17.00 net. New York: Longmans, Green & Co. 1905.

THE NEW KNOWLEDGE. A Popular Account of the New Physics and the New Chemistry in Their Relation to the New Theory of Matter. By R. K. Duncan. Illustrated. Cloth. Pp. 263. Price, $2.00 net. New York: A. S. Barnes & Co. 1905.

MODERN DIETETICS IN THE CAUSATION OF DISEASE. By J. S. Wallace, M.D., D.Sc., L.D.S. Cloth. Pp. 87. Price, 2/6 net. London: Bailliere, Tindell & Cox. 1905.

REPORT OF THE COMMISSION OF EDUCATION FOR THE YEAR 1903. Vol. II. Cloth. Pp. 2511. Washington: Government Printing Office. 1905.

NEW PATENTS.

RECENT PATENTS OF INTEREST TO PHYSICIANS.

787874 Atomizing inhaler, Anton Bulling, Munich, Germany.
787828 Anesthetic-mask, Henry Clayton, Philadelphia.
787537 Sanitary device, George Davis, Portland, Maine.
787443 Massaging apparatus, Emory J. Godman and B. F. Frizzell, Baltimore.
787760 Portable invalid's chair, Elmer E. Higgins, St. Paul, Minn.
787776 Antiseptic soap and making same, Otto Liebknecht, Frankfort-on-the-Main, Germany.
787848 Stretcher, George Lung, U. S. Navy.
787694 Syringe, Wm. H. Pontious, Chicago, Ill.
787591 Antiseptic bottle, Franck Sonnenfeld and J. Glass, New York.
788345 Vaporizer, Godfrey Beaumont, Dallas, Texas.
788451 Making meat extracts, Umberto Cianter and F. W. F. Ross, London, England.
788038 Vibratory massage appliance, George B. Fraley, Philadelphia.
788151 X-ray meter, Thomas P. Hall, Chicago.
787920 Medical apparatus. Frederick Hofmann, New York.
788362 Anatomical measuring and recording machine, Henry C. Lavery, Superior, Wis.
788059 Syringe, Patrick J. McElroy, Cambridge, Mass.
788277 Operating table or similar structure, George L. Poll, New York.
788073 Surgical pad, Henry O. Sommer, Washington, D. C.
788176 Syringe, Webster F. Traves, Cleveland, Ohio.
788757 Atomizer, Hiram C. J. Deeks, Paterson, N. J.
789092 Syringe, George A. Hulett, Ann Arbor, Mich.
788541 Cane or crutch attachment, August Kunkel, Johnstown, Pa.
789040 Electrotherapeutic apparatus, Charles F. Marsh, Pensacola, Fla.
788935 Syringe, Henry C. McKinley and A. Diegel, Detroit.
788663 Truss, Aris Menas, St. Louis.
788943 Apparatus for the treatment of certain diseases, Arthur H. Pohl, Chicago.
788557 Electrical ozonizer, Carl A. Sahlstrom, Ottawa, Canada.
789074 Making potassium salts, Aurelius J. Swayze, Danville, N. J.
789401 Umbilical forceps and metal sealing band. Ernest V. Acheson, Salt Lake City.
789647 Making dibasic calcium phosphate, Richard Arens, Marxloh, Germany.
789269 Producing tartaric acid and its salts, Carleton Ellis, Boston.
789286 Surgical appliance. Willard F. Main, Iowa City, Iowa.
789397 Astigmatic chart, Elmer L. Ryer, New York.
789237 Bacteriological oven or incubator, Charles E. Skinner, Wilkinsburg, Pa.
790051 Breast-pump, Hubert H. Halstead, Poughkeepsie, N. Y.
790057 Respirator or inhaler, John L. Hively, Elkhart, Ind.
789733 Truss, Wm. S. Hobson, Aberdeen, Miss.
789915 Determining degree of deafness, Miller R. Hutchison, New York.
789876 Sound-dissipating earpiece, Herman G. Pape, New York.
790234 Surgical instrument, Abraham R. Waldo, Eaton, Colo.
790241 Antiseptic mouthpiece for telephones or the like, Walter Wright, San Francisco.